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ABSTRACT

Summarized in this report are commission reports, resolutions, and recommendations offered to a 1971 UNESCO conference dealing with education, science, technology, and development in Latin America and the Caribbean. The narrative material serves to illuminate the Conference objectives to: (1) review the progress made in education since a 1966 conference relating to education and economic planning, (2) consider the reform and democratization of secondary education, with particular reference to the development of science teaching, (3) identify needs in respect of regional cooperation with regard to higher education, especially in science, technology and agriculture and to university scientific research, and (4) examine the Director-General's proposals concerning regional integration in Latin America in the fields of UNESCO's competence. Additional material includes the conference addresses, and lists of documents and participants. The Conference was held in Caraballeda, Venezuela, December 6-15, 1971, with the cooperation of UNESCO, the United Nations Economic Commission for Latin America and the Organization of American States. (BL)

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Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean convened in co-operation with ECLA and OAS

SE 014 415

Final Report

Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean convened in co-operation with ECLA and OAS

Venezuela
6-15 December 1971

Unesco

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PART I

BACKGROUND AND PROGRESS OF THE WORK OF THE CONFERENCE

Background

1. The Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean met in Caraballeda (Venezuela), from 6 to 15 December 1971. Organized by Unesco, in co-operation with the United Nations Economic Commission for Latin America and the Organization of American States, with the generous assistance of the Government of the Republic of Venezuela, the Conference was convened by the Director-General of Unesco pursuant to resolution 1.132 (b) adopted by the General Conference at its sixteenth session. The Conference fell within category II of the classification of meetings convened by Unesco and the decision regarding invitations to it was taken by the Executive Board at its 87th and 88th sessions, in accordance with Article 21, paragraph 1, of the "Regulations for the General Classification of the Various Categories of Meetings Convened by Unesco".

2. The following countries were invited to send delegations: Argentina, Barbados, Bolivia, Brazil, British Eastern Caribbean Group, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Surinam, Trinidad and Tobago, Uruguay and Venezuela.

3. Other organizations belonging to the United Nations system, Member States and Associate Members of Unesco from regions outside Latin America, and a number of intergovernmental and non-governmental organizations and foundations were invited to send representatives or observers to the Conference.

4. The Conference was attended by 152 delegates representing 24 countries, 14 observers from four countries, 14 representatives from nine United Nations organizations and observers from seven intergovernmental and ten non-governmental international organizations. Fifteen Ministers of Education were members of the delegations.

5. The terms of reference to the Conference were the following:

to review the progress made in education since the Conference of Ministers of Education and Ministers responsible for Economic Planning, held at Buenos Aires in 1966;
to consider the reform and democratization of secondary education, with particular reference to the development of science teaching;
to identify needs in respect of regional co-operation with regard to higher education, especially in science, technology and agriculture; and to university scientific research;
to examine the Director-General's proposals concerning regional integration in Latin America in the fields of Unesco's competence.

Preparation of the Conference

6. A meeting of experts invited in their personal capacity by the Director-General of Unesco, was held in Santiago, Chile, in March 1971, to advise him on two main subjects: (a) identification of the topics or problems that should receive priority attention in connexion with each of the items of the provisional agenda of the Conference; and (b) suggestions on the structure and content of the main working document of the Conference, which was to be prepared by the Unesco Secretariat.

7. The third meeting of the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, held in Viña del Mar (Chile) in August 1971 to study the possibility of promoting the integration of the scientific and technological activities of the region, also contributed to the preparation of the Conference. The report of the Commission appointed by the Director-General for the purpose of evaluating Unesco's regional offices and centres receiving aid from the Organization in Latin America and the Caribbean was also of assistance in the preparation of the working papers of the Conference.

Work of the Conference

Opening meeting

8. The opening meeting was held on 6 December at the site of the Conference, the Macuto-Sheraton Hotel.

The President of the Republic of Venezuela, Dr. Rafael Caldera, attended the ceremony and, in his address, stated his conviction that the current situation in the Latin American countries called for a fundamental reform of their educational systems; he added that "we are fully aware of our duty to provide the widest possible educational opportunities for the people in general". The President said that man is the essential link between education and development, since development can only be achieved by man, in full control of the tools made available to him by his own intelligence; furthermore, development can only be evaluated in terms of human beings as its necessary end. If development is to fulfil its specific functions, man must be equipped as fully as possible to do fruitful work and to channel the results of his activities towards the achievement of his highest good.

9. The democratization of education is taken in the sense of providing education for all; but, at the same time, from the substantive point of view, it should be understood as a means of ensuring that education will serve freedom.

10. Referring to Venezuela's budget for 1972, Dr. Caldera cited some significant figures showing the sincere desire of his Government to meet the growing demands of the population with regard to education. He remarked that the problem faced by his country, in consequence of the ever increasing and accelerating growth of educational costs, which would probably in future exceed the normal average growth of fiscal revenue and hence of the overall budget of the Republic, was no doubt found with similar features in all countries, although the scale of the phenomenon might differ; it called for serious consideration by the Conference. It would be necessary to draw upon all the resources of imagination; to explore new ideas; perhaps the time had come to consider education as forming part of social security.

11. Mr. René Maheu, the Director-General of Unesco, pointed out in his address that this Conference formed part of a long series of Conferences of Ministers of Education in Latin America; the Lima Conference in 1956, which gave decisive impetus to primary education; the one held in Santiago, Chile, in 1962, whose conclusions led educators to direct their efforts towards development; the Buenos Aires Conference in 1966, which brought out the importance of a qualitative improvement in education. It also followed on from the Conference on the Application of Science and Technology to the Development of Latin America, held at Santiago, Chile, in 1965, the main result of which was the setting up of a Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States.

12. Mr. Maheu recalled that the General Conference had made it clear, on the threshold of the Second Development Decade, that if education was to contribute to economic and social progress, it should not only give an important place to science and technology, but could not be dissociated from them. Those ideas had inspired the agenda of the Conference, the most important items of which were then mentioned by Mr. Maheu.

13. Analysis of the progress achieved since the Buenos Aires Conference in 1966 furnished sound reasons for satisfaction; on the whole, the projections established for the decade in respect of school and university enrolments had been exceeded, except for secondary education; the average length of primary schooling had increased; the proportion of adult illiterates had dropped from 33.9 per cent to 23.6 per cent. In general, the distribution of education was more democratic and better balanced. Despite the progress made, however, there were still reasons for concern, including the high number of illiterates, the persistence of repeaters, especially in rural areas, the inadequate training of teachers, and so on. Moreover, the fact that many governments already seemed to have reached the limit of their financial possibilities, at a time when population pressures and the requirements of democratization would inevitably impose new burdens on their countries, made it necessary to seek new solutions to the problems arising in connexion with the progress of education. New structures would have to be devised to do away with the frontiers now separating formal from informal education; the need for life-long education would have to be recognized, geared to teaching how to learn and to the constant increase and updating of a person's knowledge throughout his lifetime; the efficiency of the educational system would have to be increased by applying traditional remedies, but fresh thought would also have to be given to the content of education so as to bring it into closer touch with the aspirations and the needs of students and of society. This would not be a matter of piecemeal innovations, but rather of a general reform of education.

14. The problems before the Conference would have to be solved through bold and innovatory approaches. The reform of secondary education was an ingredient of the overall reform of educational systems, and democratization would be one of the major goals, not only to meet a requirement of justice but also to make the best possible use of human resources. But the democratization of secondary education could not be confined to quantitative expansion; nor was it compatible with the continued existence of an elitist system, or with plunging young people into working life without initial training at the secondary level. For this reason, democratization would require an effort to reorganize secondary schooling so that it might make a more direct contribution to the general development of the community.

15. The place assigned to the teaching of science, technology and agriculture and the regeneration of its methods and approaches, would be of particular importance, since the number and quality of the technicians necessary for development would depend thereon. It would, moreover, be essential to have new structures to ensure the interweaving of general education with technical education, so as to promote a new scientific humanism in keeping with the needs of the time.

16. At the level of higher education, said the Director-General, the same arguments held true, calling for a special effort with regard to the teaching of scientific subjects. Increasingly, the ideal of an integrated science teaching was tending to replace that of a compartmentalized form of teaching. In this respect, the regional context would seem to lend itself to the establishment of a network of pilot projects in interdisciplinary science teaching. Such regional co-operation for the creation of a network of "centres of excellence" would conserve material and human resources, facilitate endogenous scientific development, check the brain drain and enable the States concerned to exploit their natural resources through their own means.

17. As regards higher education, regional co-operation required that students, teachers and research workers should be able to move from country to country without hindrance. This called for an effort to establish the equivalence of studies, degrees and certificates.

18. On the subject of scientific research in the universities, Mr. Maheu drew the Conference's attention to the conclusions reached by the third meeting of the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, held in July 1971 in Viña del Mar and Santiago, Chile, pointing out once again the importance of regional co-operation.

19. Mr. Maheu went on to speak of the General Conference's request, made at its sixteenth session, that he should put forward proposals regarding regional integration in Latin America in the fields of Unesco's competence. Referring to document UNESCO/MINESLA/4, which met this request, he pointed out that the idea of regional integration needed to be more clearly defined (which would involve political decisions to be made by governments themselves) and outlined a number of questions, of decisive importance for guiding Unesco's future activities in the region.

20. Finally, the Director-General reaffirmed his determination to place the financial, intellectual and moral resources of Unesco at the service of the region, and expressed his conviction that the Organization, turning to account the experience gained throughout the world, was in a position to assist governments in formulating national education and science policies, with particular reference to the reform of educational systems, so as to bring about the difficult but imperative unification of technological progress and culture, of economic growth and human fulfilment.

Organization of the Conference's work

21. At its first plenary meeting, the Conference proceeded to elect its Steering Committee. On the proposal of H. E. Mr. Gustavo Malek, Minister of Culture and Education of Argentina, H.E. Mr. Enrique Pérez Olivares, Minister of Education of Venezuela, was elected President by acclamation.

22. The Conference also elected six Vice-Presidents: H. E. Mr. Augusto Mendizábal Moya, Minister of Education and Culture of Bolivia; H. E. Mr. Uladislao Gámez Solano, Minister of Education of Costa Rica; H. E. Mr. Waldo Suárez, Under-Secretary for Education of Chile; H. E. Mr. Edwin Allen, Minister of Education of Jamaica; Mr. Olmedo Domingo, Vice-Minister of Education of Panama and General Alfredo Carpio Becerra, Minister of Education of Peru. In addition, Mr. J. W. Bautista Vidal, of the Brazilian delegation was appointed Rapporteur.

23. The Rules of Procedure (UNESCO/MINESLA/2) and the Agenda (UNESCO/MINESLA/1) were approved without change. In accordance with the Rules of Procedure, two Commissions were set up.

Commission I dealt with item 8 of the Agenda: "Reform and democratization of secondary education". H. E. Mr. Gustavo Malek, Minister of Culture and Education of Argentina, was appointed Chairman, while H. E. Mr. Francisco Jaramillo Dávila, Minister of Education of Ecuador, and H. E. Mr. Pío Segundo Calderón, Under-Secretary of Education of El Salvador, were appointed Vice-Chairmen. Mr. Andrés Cardó Franco, of the Peruvian delegation, acted as Rapporteur.

Commission II dealt with items 9 and 10 of the Agenda: "Regional co-operation in higher education, with particular reference to the teaching of science and technology, including agricultural education" and "Regional co-operation in scientific research in the university". H. E. Mr. Victor Bravo Ahuja, Secretary of Education of Mexico, was appointed Chairman of the Commission and Mr. Juan Mier Febles, of the Cuban delegation, and Mr. Juan E. Riveros Roldán, of the Paraguayan delegation, Vice-Chairmen. Mr. Jaime Ayala Ramírez, of the Colombian delegation, acted as Rapporteur.

24. From 7 to 9 December the Conference held five plenary meetings devoted to item 7 of the Agenda. Mr. A. M. M'Bow, Assistant Director-General for Education in Unesco, introduced the "Review of progress made in the education sector in Latin America and the Caribbean since the Ministerial Conference held in Buenos Aires (1966)", referring to the working papers prepared to assist the discussions and briefly outlining document UNESCO/MINESLA/3. In conclusion, he noted that perusal of the working papers showed that educational activities in Latin America were designed to achieve the same objects as the General Conference had adopted as a basis for Unesco's

work in the field of education, namely the generalization of the right to education, as one of the basic human rights, and the regeneration of education which was essential at a time marked by rapid changes continuously affecting the whole of society and the values on which it was based. These two major objectives, namely the right to education and the regeneration of education, were of abiding importance and therefore bound up with any real and lasting progress in education.

25. The heads of delegations then reviewed the progress made since 1966, at the same time drawing attention to outstanding problems and to proposed guidelines for future action. A general summary of these statements will be found in Part II of this report.

26. The plenary meetings devoted to item 7 concluded with a statement by Mr. René Maheu, the Director-General of Unesco, who summed up the most outstanding facts and main trends in education in Latin America as they emerged from the general debate.

27. With regard to item 11 of the Agenda, "Regional integration in Latin America in the fields of Unesco's competence", it was agreed to set up a working party to prepare a draft resolution for submission to a plenary meeting. The working party was chaired by the President of the Conference, and consisted of the heads of the delegations of Argentina, Brazil, Chile, Cuba, Honduras, Jamaica, Mexico and Peru.

28. Mr. Manuel Jiménez, representing the Director-General of Unesco, introduced the item with a brief summary of document UNESCO/MINESLA/4, drawing the attention of the Ministers of Education to the Director-General's proposals in the Addendum to that document.

29. The Commissions started their work on 10 December and on the 13th adopted the reports to be submitted to the plenary Conference. On 14 December, the Conference considered the report submitted by the working party on the subject of regional integration in Latin America in the fields of Unesco's competence and, with the delegation of Guatemala abstaining, approved the draft resolution appearing in Part V of this Report. The General Statement contained in Part VI was approved unanimously.

30. On 15 December, the Reports submitted by the Commissions were discussed in plenary meeting and the recommendations therein were approved by a majority. When Recommendation No. 17 was approved the delegation of Cuba asked that it be put on record that it had voted against the text since it included a reference to the Organization of American States. The delegation of Peru asked for it to be recorded that it agreed with the ideas contained in the Recommendation concerning the offer of more assistance to the countries in which educational development was less advanced, but felt that, for stylistic reasons, recommendations should be addressed only to Member States and to Unesco.

31. During the final plenary meeting on 15 December, speeches were made by the head of the delegation of Ecuador, Mr. Rubén Orellana; the Minister of Education of Jamaica, H. E. Mr. Edwin Allen; and the head of the delegation of the United States of America, Mr. Sherwin Landfield.

Tributes and good wishes

32. At the beginning of the Conference, a delegation from the Municipal Council of the Federal District of Caracas welcomed all the delegations taking part and expressed the Council's hope that the purposes of the meeting would be fully achieved.

33. At the suggestion of the delegation of Costa Rica, the Conference agreed to send a congratulatory telegram to the Chilean poet, Pablo Neruda, on the award to him of the Nobel Prize for Literature for 1971.

34. The Steering Committee was authorized to prepare a declaration to mark Human Rights Day, 10 December.

35. On learning of the death of Mr. Ralph Bunche, Under-Secretary-General of the United Nations, the President of the Conference sent a telegram to condolence to the Secretary-General, U Thant.

36. At the last plenary meeting, the head of the delegation of Guatemala, Ambassador Juan José Arévalo, paid a moving tribute to the memory of two distinguished Latin American educationists who had died in 1971: Miss Luz Vieira Méndez, the Director of Unesco's Regional Office for Education in Latin America and the Caribbean, and Mr. Oscar Vera Lamperein, a former Unesco staff member who had done much fruitful work for the promotion of education in Latin America.

37. The Conference unanimously endorsed the tribute paid by Commission II to the memory of the eminent Argentine professor, Bernardo Houssay, winner of the Nobel Prize for Chemistry, who died in 1971.

38. Several cables conveying good wishes for the success of the Conference were received, including one from the President of the Asociación Panamericana de Instituciones de Crédito Educativo, holding its fourth Congress in the city of Santo Domingo. Mr. Ricardo Diez Hochleitner, Under-Secretary for Education of Spain, sent a message confirming on behalf of the Minister of Education and Science, his offer of co-operation from Spanish research and training centres in carrying out the programmes that the countries of the region, in agreement with Unesco, intended to put into effect.

39. On the proposal of the delegation of Ecuador, the Conference unanimously adopted the following decisions:

(a) The Conference reaffirms, in Unesco's 25th anniversary year, its belief in the lofty aims that prompted the creation of the Organization - the promotion of human rights, peace and international co-operation - and calls attention to its

achievements in promoting these ideals throughout the world. It expresses its gratitude to the Director-General for the stimulus and encouragement imparted by Unesco under his guidance to the development of education, science and culture in Latin America, laying particular stress on his brilliant and effective direction of successive Conferences of Ministers of Education held in the region since the Lima Conference in 1956 until that which is closing today.

(b) The Conference conveys its gratitude:

to the Government and people of Venezuela for their generous and cordial hospitality;

to His Excellency the President of the Republic, Dr. Rafael Caldera, for honouring the meeting by taking part in it personally;

to H.E. the Minister of Education of Venezuela for directing the proceedings and guiding the discussions with such understanding and skill;

to the local organizing Committee and all their assistants for their devoted and efficient services to the Conference.

Closing meeting

40. At the closing meeting on 15 December, addresses were delivered by the Director-General of Unesco, Mr. René Maheu, and the President of the Conference, H.E. Mr. Enrique Pérez Olivares, Minister of Education of Venezuela. These are reproduced as an Annex to this Report.

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PART II

REVIEW OF PROGRESS MADE IN THE EDUCATION SECTOR IN LATIN AMERICA AND THE CARIBBEAN SINCE THE MINISTERIAL CONFERENCE HELD IN BUENOS AIRES IN 1966

(Conclusions of the general discussion)

41. This item of the Agenda was dealt with in plenary meetings at which the ministers and heads of delegations spoke. The item was introduced by Mr. A. M. M'Bow, Representative of the Director-General of Unesco, who referred to the chapters in document UNESCO/MINESLA/3 concerning the topic and drew attention to certain points in them.

42. The paragraphs which follow do not attempt to reproduce or summarize the abundant matter contained in the speeches, but simply to underline a few outstanding points made in several of them. The conclusions are of a general nature and deal with the region as a whole; it is not claimed that they are equally applicable to all countries, since the intensity and magnitude of the problems differ considerably from one to another.

43. The statements by the ministers and heads of delegations, together with the basic document prepared by the Unesco Secretariat, enabled the Conference to pin-point the most significant facts and trends of education in Latin America and the Caribbean, to determine the problems that have been besetting it and to recognize the efforts made by the different countries to solve those problems.

Accelerated growth of education

44. It was noted with satisfaction that education had expanded appreciably in all the countries and at all levels, a fact which showed that education was one of the most dynamic of all the sectors that contribute to social development in the region.

45. As the decade of the sixties ended, Latin America and the Caribbean proved to be the region of the Third World with the highest rates of school enrolment for its population. In a period characterized by rapid population growth, the annual rate of which (2.9%) is the highest in the world, the school population increased, on the whole, approximately twice as fast as the group of school age.

46. This growth was particularly marked and even spectacular in secondary and higher education, where expansion, during the first five years of the decade, took place at an annual rate of 11.33% and 9.45%, while during the second five years it amounted to 7.8% and 10.45% respectively.

47. This rapid expansion of secondary and higher education, reflected in a considerable widening of the upper levels of the educational pyramid, is the most salient feature of the development of education in Latin America and the Caribbean in recent years, and everything indicates that in most countries of the region the current growth rates will continue and even increase during the next decade. In this trend, a noteworthy fact has been the growing participation of women in the benefits accruing from education - female enrolment has increased at a rate faster than that of the school population in general.

48. Two factors combined to produce this noteworthy growth of education in the region. On the one hand, governments gave high priority to education in their development policies; for example, 21% of public expenditures and roughly 4% of countries' national product were spent on education throughout the region, while a good many countries exceeded this latter percentage, which had been set as a goal at the Santiago, Chile Conference of 1962. On the other hand, there has been an explosion in the demand for education by populations who are increasingly aware of their right to education and of its importance if they are to play a full part in the economic, political and social processes of national development.

49. The growth revealed by the figures is not just quantitative, but has a qualitative significance: a change-over from education systems that have until quite recently been restricted to minorities, to other systems to which the broad masses of the population will have increasing access. As a result, the countries of the region at present hold in their schools potential human resources which until a few years ago, were not available to them for meeting the challenge of the future.

Major problems of education in Latin America and the Caribbean at the beginning of the seventies

50. At the same time, alongside its satisfaction with this overall expansion of education systems, the Conference expressed concern over a series of grave shortcomings in education, some having been apparent for a long time, others being the outcome of this very process of accelerated growth in recent years.

Shortfalls in compulsory education and the problem of illiteracy

51. The expansion of primary education set in motion by the Major Project launched by the Latin American countries in 1957 has been considerable and its effects can be seen in the growth of secondary education in the sixties. Nevertheless, this expansion in primary education is far from having brought about the enrolment of the entire primary-school cohort. Rough calculations indicate that in 1970 approximately eight million children in the 7 to 12 age-range were excluded from education, which all Latin American States have declared universal, free and compulsory.

52. Latin America is the only region in the world where illiteracy has gone down, not only in percentage, but also in absolute terms. From a figure of more than 41 million in 1960, it fell to less than 39 million in 1970. None the less, this number is still alarming and in many countries of the region illiteracy continues to be one of the major human and social problems and an obstacle to economic and political development projects that require the active participation of the population. Adult education, despite some progress, has not received the attention, nor reached the degree of development, that are desirable.

Imbalances in access to education, continued attendance and advancement in the system

53. The satisfactory overall growth of education in the region conceals serious imbalances in the actual opportunities available to different groups of the population for enrolling in schools and continuing to attend them. Geographical, ethnic, economic and social factors, aggravated by shortcomings in the education systems themselves, are the cause of these inequalities, and no systematic and deliberate action has as yet been undertaken to overcome them.

54. The major disparities are those occurring between different regions in the same country, and within those regions between urban and rural areas. In the latter, inequality of educational opportunity is of most gravity and in some countries is also most widespread. It is in rural areas in all countries of the region that schooling reaches fewest children, shows the greatest qualitative failings and yields lowest results as a service. Lack of a clear notion of the nature and rôle of education in these areas, and of concerted action for its betterment, in step with other development efforts, has prevented countries from planning and applying forms of education most appropriate to such areas.

Evaluation of the results yielded

55. The Conference viewed with concern the continued low efficiency of education systems, as revealed by the numbers of drop-outs and repeaters, and the absence of policies to correct the situation on the basis of combined social, economic and teaching measures.

56. This poor performance is perhaps the most obvious and severe deficiency in Latin American education. From the financial point of view, it reduces the return from the resources allocated to education by at least one-third. From the standpoint of the students and of society, it largely frustrates the very aims of education. The drop-out rate combined with deficiencies in the quality of education and the organization of curricula, produce growing masses of individuals with an incomplete education. A large perc[illegible]tage of primary-level drop-outs fall back into illiteracy. Those who drop out at the secondary or higher levels lack the basic training which would equip them for the labour market. In fact, studies on unemployment and underemployment show that a high percentage of the unemployed and underemployed have not completed their education. In this way, the schools systems are becoming a source of individual and social frustrations. No-one, of course, intended this but no systematic measures are being taken to deal effectively with this serious problem.

Disparities and poor organization in educational systems

57. The most serious deficiency in this respect is found at the secondary and higher levels, in the uneven development of the various forms and branches of education. Although, in absolute terms, enrolments in technical education more than doubled in the sixties, in relative terms there was a gradual decrease in the percentage this branch represents within the secondary education sector. Of the 9.4 million students in secondary schools in 1970, 68.2% took general subjects while only 23.5% followed technical courses. In 1960, the percentages were, respectively, 64.8% and 25.7%. It should, however, be mentioned that, in some countries, educational reforms have been directed to instituting general courses of secondary education or to extending primary education, which means that the scale of the phenomenon mentioned above is less than it appears. In any case, in view of the increasing manpower requirements for the social and economic progress that countries want to

achieve, this aspect of the situation may be considered negative in effect. The problem would not be so serious if the quality, trend and content of general education were such as to provide a basis for the accelerated training of the required staff, or if there were appropriate vocational schools associated with industry for them to attend.

58. In higher education, the rate of development of the scientific branches is slower than that for literary and social studies.

59. To these disparities must be added the fact that the countries of the region have not yet found an overall model for educational organization rooted in their own conditions and needs. Such a model would help co-ordinate teaching methods within the school system and assist in developing suitable links with the diverse forms of out-of-school education. It would also promote better use of the modern media of communication and information both in and out of school. Up to the present, education in the region has appeared rather as a motley collection of scattered and disjointed institutions and patterns, both aimless and wasteful.

The quality of education

60. Problems in this area are on two closely related levels: facilities and other requirements for efficient education; and the aim and content of education. As regards the first aspect, the explosion in the demand for education recorded during the past decade, forced countries to concentrate their efforts on quantitative growth, involving a certain degree of improvisation as regards school buildings and teaching staff. Many schools were built, but they were often poorly equipped. All this directly reflected on quality. The lack of balance between operating expenses and salary costs, on the one hand, and capital expenditures on the other, is symptomatic.

With regard to the aim and content of education, three fundamental problems were pointed out during the Conference, among many others. Firstly there was scant connexion between the content of education and work, which is important as a basic element in shaping and developing the individual so that he may contribute to building society. In particular, it was felt that this component was lacking from general education in the region, and stress was laid on the need for an education through work as well as for work that would generate in the students due appreciation of the value of human effort in serving the community, and the necessary virtues for such service.

61. Secondly, attention was drawn to the scant development of science as a subject and as an instrument of general education, in educational systems at all levels. This is a serious deficiency in a world in which science provides the motive power for human progress, and in which the developing countries can find in the application of science and technology to their own needs the means to overcome dependency and to narrow the gap separating them from the highly developed nations.

62. Thirdly, stress was laid on the idea that education should cater for all men and for the whole man - that is, it should take in every aspect of man's personality - since it was unfair and prejudicial to society that the individual should be frustrated and deprived of the opportunities of developing and of asserting his personality that education should provide. This was the "all-round education" which had always been talked about but it should be interpreted in the light of current realities and trends: an education comprising the training of the intellect, the inculcation of an appreciation of the value of work, and the virtues of industry, the development of creative abilities and of a sense of community with one's fellows, all this being combined with character training and the fostering of the individual's will to devote his knowledge and activities to the advancement of society, and to find his self-fulfilment as a human being through serving the society of which he forms part.

The planning and administration of education

65. The Conference noted with satisfaction the progress made in the region during the last decade in the theory and practice of educational planning. All the countries now have technical machinery for educational planning at the ministerial level. The officials in charge, although so far, too few in numbers, have been trained specifically for their work. In all countries in the region, plans for education were developed throughout the decade.

64. Nevertheless, a major effort seems to be needed to achieve the objective first set by the 1962 Conference and restated by that of 1966, namely, overall education planning integrated with development planning so as to constitute an effective instrument in formulating policies and in administering education. The need for education planning to move on from the stage of simply ensuring orderly quantitative growth to attain a more sophisticated level where the efficiency of organizational patterns can also be assessed, as can the extent to which educational systems meet the needs of society, is particularly strongly felt. Planning would have to go more deeply into the problems of education and would have to become an instrument for decision-making in education and for bringing order into the application and assessment of the educational reforms and innovations in which the countries of the region are engaging.

65. On the other hand, the successful planning and reform of education call for substantial changes in the structure and operation of educational administration together with improved training for the relevant staff. The success of the educational innovations introduced by countries will in fact mainly depend on the attitudes and qualifications of the teaching staff, on the realization by

the various sectors of society of the need for those changes, and on the competence and efficacy of school administration.

Efforts to improve and reform education

66. While making a critical examination of the major problems concerning education in the region, the Conference noted with satisfaction the efforts towards their solution that had been made since the Buenos Aires Conference.

67. All countries have earnestly endeavoured to achieve the ideal of providing full primary education for all children of school age. To this end, the network of schools has been appreciably extended during the past five years, especially in rural areas and in the densely populated outskirts of big cities, with a resulting increase in the number of teaching posts, and the implementation - often with international assistance - of plans for school buildings. There has also been a notable expansion of social assistance programmes for schoolchildren. Increased aid in the form of scholarships, meals, clothing, school supplies, medical services, holiday camps and transport has, in some countries, been accompanied by supplementary types of assistance, such as allowances to parents for each child attending school, school insurance, and so on.

68. There has been an expansion of pre-primary education, which is beginning to reach the least privileged sectors of the population in the form of day-care centres and nursery schools.

69. The traditional literacy campaigns, which are usually intermittent and therefore not fully effective, have given way to the development of adult education programmes with more precise aims, better adapted to the needs in respect of general education and social and vocational training of young people and adults who have not been able to attend school. Almost all the countries in the region already possess, in different institutional forms, technical and administrative agencies responsible for adult education and community development programmes; some have progressed to the stage of regarding out-of-school education programmes as an aspect of life-long education and are tending to make use of all the educational resources afforded by the community: press, radio, television, sport, leisure, civic and trade union activities, etc.

70. The high failure and drop-out rates within the school system have been a cause of deep concern to the governments of the region, which have tried out various technical, administrative and organizational measures to overcome the problem. The most effective of these have been plans for the systematic and gradual completion of incomplete schools, which various countries of the region are carrying out; a reform of the system of grading and marking, and the adoption of a system of automatic promotion through the lower grades of primary or basic education, with nation-wide examinations and tests upon completion of the primary cycle.

71. With the object of modernizing and developing rural areas, several governments have been led to concentrate their attention on the educational needs of the rural population and of those ethnic groups that have always been underprivileged. Some countries are using the system of centralized schools, sometimes with boarding or semi-boarding facilities, designed to provide for a scattered peasant population; others have carried out interesting experiments aimed at determining specific development areas in which school and out-of-school resources are concentrated so as to foster the cultural, social and economic development of the entire community, with the participation of the local population.

72. The imbalances between the various levels, types and branches of education have begun to give rise to special treatment in the elaboration of educational plans. At the secondary level, where there is a particularly striking imbalance between the enrolment for general secondary education on the one hand, and the enrolment for technical and vocational education on the other, measures are being taken which should ultimately be very effective. They consist in the establishment of services for educational, vocational and professional guidance, the revision of the diversified cycle in accordance with the needs of the labour market, and, especially, the improvement of technical and vocational education for which efforts are being made to provide better qualified teachers and appropriate premises and equipment. In one country, there is already evidence of satisfactory results from an experiment designed to promote the access of women to secondary-level technical schools which used to be reserved for men.

73. Perhaps the sector in which the greatest efforts have been made to improve the quality of education is that of the pre-service and in-service training of teaching staff and of the professional qualifications of uncertificated teachers already serving. Several countries have eliminated the general training cycle from their teacher-training colleges and have transformed these into higher-level specialized centres. Some countries have virtually put an end to their plans for the training of "stop-gap" teachers, because they have attained earlier goals and can now concentrate their resources on the systematic further training of serving teachers. Also noteworthy is the reorientation of existing training centres and the establishment of others whose main function is to co-ordinate the implementation of national plans for educating the educators. In some cases, such centres also train administrators, supervisors and other specialized educators. In certain countries, these activities have been closely linked with educational research and experiment.

74. In several countries appreciable improvements have been made in the social and economic status of teachers, by means such as the revision of salary scales, the standardization of systems

of appointment and promotion, and the creation of special incentives for the exercise of the teaching profession. In a number of cases steps are being taken to change over from a system whereby secondary-school teachers are appointed by the hour to a system of full-time appointments and permanent posts.

75. Nearly all the countries have started to tackle the revision of their curricula, so as to bring them up to date and strengthen their content in a way befitting the psychological and social development of the students, and adapted to the needs of society and the requirements of scientific and technological development. Some countries have put new curricula into effect experimentally in a small number of pilot schools, gradually extending them as teaching staff become trained in their proper application. At the same time a special effort has been made to improve school textbooks, and to increase the provision of equipment laboratories and teaching aids in general, as well as to improve the use made of media such as radio and television. In some cases experimental applications of the technique of programmed instruction have begun to be made in certain technical schools at secondary level and in higher education.

76. Concern with the problems inherent in educational administration is becoming general; a number of countries have taken measures for the improvement of their administrative machinery, their organizational patterns, methods, procedures, and for the provision of staff training facilities.

77. In the countries with highly centralized administrative systems, attempts are being made at decentralization and regionalization, while in those with a federal constitution, ways are being sought to formulate and carry out educational policies at the national level. One of the region's countries is attempting to apply the idea of education as a national service, with the Ministry of Education responsible for promoting and co-ordinating the country's total educational effort.

78. In recent years, some of the countries in the region have introduced reforms into the structure of their educational systems. These reforms are aimed at filling the current gap between primary and secondary education, by introducing a basic 8- or 9-year curriculum. This is to include a guidance phase or cycle, designed to help pupils to plan and arrange for their further education, and also to channel appropriate numbers of pupils into the various branches or options of the subsequent 3 or 4-year "mid-level" cycle. This "diversified" cycle, and the problem of how and where best to provide it, has been tackled in a variety of ways in the different countries of the region.

79. One country has adopted the radical solution of doing away with secondary education, by merging this level partly with primary education and partly with higher education. Higher education has in turn been split into various levels, to meet national development needs. The creation of "shortened courses" at the higher level has become widespread in the region.

80. Educational reforms were brought in for a variety of reasons in the different countries. Some were motivated by the need to overcome shortcomings in the system, or to modernize it. Others were inspired by political or social ideals, according to which the reform of education should be both a part of, and an instrument for, the reform of the very structure of society.

81. The idea is gaining ground of education as a liberating force that helps to form an individual's critical awareness and to encourage his responsible participation in the cultural, social, political and economic processes.

82. A tendency may be noted towards involving the whole community in educational reform. In a number of countries national seminars or conferences have been held, attended by teachers, parents, students and labour and employers' organizations.

83. One of the participants in the general debate put forward the idea that change must be institutionalized, so that it could become a continuous and permanent process.

84. Mention was made of the serious problem of unemployment with which a number of countries were faced, and of the need for it to be borne in mind in educational planning and reforms which should be directed towards its solution.

85. University reforms constitute an important aspect of the changes occurring in some countries' higher education. These reforms are aimed at fitting universities to meet the demands of the present-day world and the needs of each country, in line with the creative spirit of our societies.

86. In almost every country, a strong tendency is emerging towards the shaping of educational curricula at all levels, and especially those for the teaching of science and technology, in accordance with the country's social and economic requirements and with the stage of development it has reached.

87. Some countries have developed strong post-graduate programmes, leading to masters' and doctoral degrees, especially in basic science and technology. The aims here are to accelerate university reform, to institute research as a regular activity, to improve university teaching staff, and relate education to the creative spirit that the productive system in Latin America and the Caribbean increasingly demands for the furtherance of the region's independence.

88. Lastly, satisfaction was expressed at the valuable and effective co-operation afforded by Unesco to governments and nations in their efforts to extend education to ever broader sectors of the population and to adapt teaching and learning to the rapidly changing needs of the people of Latin America and the Caribbean.

PART III

REPORT OF COMMISSION I

Introduction

89. Commission I met in the afternoon of 9 December and on 10, 11 and 13 December, holding six meetings in all. On various occasions small working parties were set up to consider specific points entrusted to them by the Commission.

90. H.E. Mr. Gustavo Malek, Minister of Education and Culture of the Argentine Republic, was elected Chairman; H.E. Mr. Francisco Jaramillo Dávila, Minister of Education of Ecuador, and Mr. Pío Segundo Calderón, Under-Secretary for Education of El Salvador, were elected Vice-Chairmen; and Mr. André Cardó Franco, of the Peruvian delegation, was elected Rapporteur.

91. The Chairman announced that the Unesco Secretariat had appointed Mr. Jean Knapp as the Director-General's representative on the Commission, Mr. Angel Oliveros and Mr. Guy Bretones as Advisers, and Mr. Miguel Soler Roca as Secretary.

92. He reminded members that the Commission's task was to draw up conclusions and recommendations on item 8 of the Agenda, which read as follows: "8. Reform and democratization of secondary education; 8.1 Democratization of secondary education; 8.2 Innovation and reform at secondary education level; 8.3 The teaching of science and technology - including agricultural education - in secondary education, in relation to development needs".

93. Mr. Jean Knapp introduced the subject, drawing attention to the need for interrelation between the processes of democratization and those of reform of education, and to the part that should be played by scientific and technical education in the development both of society and of the individual person, as a prerequisite for any genuine democratization. Referring to document UNESCO/MINESLA 3: "Development of Education and Science Policies in Latin America and the Caribbean" and to the document "Secondary education, social structure and development in Latin America" submitted jointly to the Conference by ECLA and ILPES, he described briefly the obstacles standing in the way of the democratization of education and the prospects for overcoming them offered by the new concept of life-long education.

94. At the request of one delegation, the Commission attempted to clarify some of the terms included in the wording of item 8. In fact, according to one view, it was not enough simply to define the notion of "democratization"; it was also necessary to decide whether to speak of "teaching" or of "education", and what was really meant by the "secondary" level in the organizational pattern of education systems. The Commission rapidly agreed that the discussion and the subsequent recommendations should refer to secondary "education", which better covered the relevant individual and social implications than did the expression secondary "teaching".

95. With regard to the notion of "secondary" education, it became clear that the word had a wide variety of meanings in different countries, not only in relation to the age groups involved, but also in its objectives, its general or diversified nature, its duration, its possibly compulsory character, the importance attached to training for productive work, and its place in the pattern of education systems. Since it was recognized that the Conference had to make recommendations on the democratization of this specific part of the educational system, agreement was reached on the need to draw up parameters, if only for practical purposes, within which the discussion should be confined. To that end the Chairman appointed a small working group whose proposals, which were adopted by the Commission, are set forth below.

96. Secondary education had three main objectives:

(a) to provide a broader education than that given in primary schools;

(b) to prepare pupils for university or third-level education;

(c) to provide a vocational training such as will fit young people for active life and work.

Secondary education consists of cycles of studies,

the nature and length of which vary from one country to another.

97. There are, indeed, variations in the length of the primary course or basic cycle, qualifying for entrance to secondary education. In the region, primary schooling lasts from 4 to 9 years; in most cases, its length is 6 years.

98. Secondary education comprises, accordint to differing systems, general teaching and vocational training; in some cases it also includes teacher training. However, the latter may only be provided partially at the secondary level, or it may be reserved entirely for higher education.

99. Pursuant to the resolutions of the Ministerial Conference held in Buenos Aires, which recommended the introduction of a common cycle of general education of 8 or 9 years' duration, some countries in the region have recently modified their secondary system in one of two ways: (a) some have changed the first two or three years into a compulsory continuation of the primary cycle, with the same features of basic, common and compulsory education for all children; (b) others have introduced a basic education cycle of up to 9 years' duration, prior to secondary education proper, which lasts 3 to 4 years on an average, with diversified studies, and is intended to provide both general education and vocational training.

100. The Commission considered that the primary objective of countries should be the introduction everywhere of a common cycle of general education lasting 8 or 9 years, and that each country should adopt strategies and allocate resources for that purpose. Each country would organize this cycle of common education in accordance with its own peculiarities, the aim being to standardize the basic level of education throughout the region, although initially, in those countries where education was less advanced, the number of years might be fewer than 8 or 9, as a first step in a strategy of gradual universalization.

101. The Commission deemed it desirable that Unesco should study the characteristics of the cycle following the common or basic cycle, with the object of recommending the forms of multi-purpose training there should be and the methods best calculated to achieve democratization.

102. Unesco was requested to take steps to ensure the adoption of a common terminology for use in all the countries, having regard to the fact that the introduction of the common cycle of 8 to 9 years would involve changes in the terms hitherto used in connexion with primary and secondary education: thus, for instance, in some countries the term "secondary education" related to schooling from the sixth to the twelfth year, while in others it related to the tenth, eleventh and twelfth years.

8.1 Democratization of secondary education

Meaning and implications of the democratization of secondary education

103. There was a very detailed discussion on the notion of "democratization". The Commission took account of the documents submitted to the Conference, the general debate in earlier plenary meetings, and the summary thereof made by the Director-General of Unesco; it recognized the variety of factors that should be borne in mind as essential components of the concept, the chief of these factors being equality of opportunity.

104. In an endeavour to go beyond a purely quantitative approach, it was noted that some of the implications of democratization might be considered as related to educational techniques proper, whereas others had to do with factors which, though they might appear extraneous to the educational system, nevertheless exerted a strong influence on educational processes. As for the elements within the system, it was readily agreed that the democratization of education called for administrative methods and patterns of organization - going beyond the traditional rigidity of institutions - which should be related to real educational programmes combining formal education with a variety of extra-curricula activities open, in particular, to adults and young people who had not received an adequate schooling. There was likewise agreement that the content of curricula should be such as to afford the pupil ample opportunity to interpret the society in which he lives so that, in due course, he will be able to play an active and responsible part in bringing about the changes needed in that society. Teaching methods should also be thoroughly overhauled, with the aim of improving relations between all those who make up the educational community, of giving more scope for individual guidance and of making appropriate use of the advances in modern educational techniques.

105. Some delegations were of the opinion that no real democratization of education could be achieved unless outside factors - economic, social and even political, for instance - were taken into account; in their view, the democratization of education would therefore be impossible unless there were at the same time a democratization of society as a whole - which, in the case of the countries of the region, would necessitate far-reaching structural changes. Furthermore, the democratization of education should also be understood as a contribution by the educational sector to the promotion of social change. Other delegations considered that the Conference should not go beyond the technical and pedagogical connotations of the notion of the democratization of education. Various speakers pointed out that some of the draft resolutions submitted were worded in a way calculated to confer on the debate a political rather than an educational character, and this would be going beyond the strict

terms of reference of the Conference. Other participants, however, argued that the interrelations between education and politics formed part of the very nature of education and could not be disregarded without substantially affecting the concept of the democratization of education.

106. The Commission found that these points of view were in a way reflected in the draft resolutions submitted by the delegations of some countries. It thought it necessary to make an effort to draw up a text reflecting the consensus of the Commission, and the Chairman therefore appointed a working party for this purpose. The proposals submitted by the working party were approved with some amendments, and served as the basis for the first resolution approved by the Commission in connexion with item 8 of the Agenda.

Factors that hamper further democratization of secondary education in Latin America

107. A working party was appointed to identify the factors, both within or without educational systems, that affected the degree of democratization so far achieved in secondary education, and to indicate the principal conditions that would favour democratization. The Commission endorsed the findings of the working party; it also recommended that some of the comments contained in the documents prepared for the Conference by Unesco, ECLA and ILPES be added to those findings.

108. Some of the factors in question affect the democratization of secondary education within the context of educational development. This is the case, for example, when there is an inappropriate distribution of income, when budgetary allocations for education are insufficient or resources are not rationally used, or when there is no effective connexion between the objectives of secondary education and the economic and social policies of a country. Trends in the labour market have a decisive effect on the manpower produced by secondary schooling, and also on the expectations of the population with regard to the result of education. The increasing number of job opportunities and the higher social prestige offered by the tertiary sector engender a desire for the best education; this explains why middle-class parents seek to give their children the best possible educational opportunities. In practice, this merely lengthens the time given to general studies; it seldom provides real training to meet the countries' development needs, to the detriment, particularly, of technological education at the secondary level. Thus young people are wastefully under-educated, while at the same time rising expenditures on education compound the waste. In accordance with the concept of the democratization of education, all young people who accede to secondary education should receive a training consonant with present and future economic and social development and should have opportunities of putting that training to use in types of work in keeping with sound manpower policies.

109. Some factors of a social nature are also of importance - such, for instance, as traditional forms of organization of agricultural production that employ children and adolescents, or as other sectors of the population that reject physical work and manual or technical occupations.

110. There are, moreover, internal factors in educational systems that reduce the possibilities of democratization. Firstly, the unsatisfactory yield of primary education and the inequality of educational opportunity at this level. It is true that primary enrolment has continually increased during the past ten years, and this undoubtedly has repercussions on secondary enrolment. But for millions of children who have no schools or who drop out in the early stages, the problem still lies in the democratization or, even better, in the universalization of primary education, without which the democratization of subsequent stages is illusory. This is reflected, above all, in the still precarious situation of education in rural areas, in the inadequate attention paid to some monolingual and bilingual groups, and in the paucity of opportunities for adults to be provided with education by out-of-school methods designed to compensate for the limitations of the formal schooling system.

111. The shortage of teachers, their inadequate training, and the unsuitability of the techniques used for guidance, supervision and evaluation, are also important factors. The democratization of education requires that teachers should be in a position (from the technical, occupational and even ethical points of view) to interpret and apply the objectives of the national plan for education, its reforms and its methodological innovations.

112. Another limiting factor is the slowness with which the teaching of science and technology is introduced into secondary education. In view of the rapid advance of scientific knowledge - the basis for man's mastery over nature - this lag means that, in the next few years, the countries of Latin America and the Caribbean will be even farther behind the developed countries and will be facing even greater difficulties in democratizing the access to education throughout a person's life. The lag is doubtless due to a chronically empirical approach, which is reflected in a shortage of institutions for educational research, experiment and documentation, and in a lack of resources for educational research work.

113. In some countries, moreover, compulsory education is not yet fully in force, and underprivileged children are not receiving sufficient aid to enable them to enrol in school and attend classes regularly.

114. The Commission recognized that the continued existence of these limiting factors does not detract from the positive factors that are at work in society and that are likely to favour the democratization of education - such, for instance, as a better appreciation of the general importance of

education in relation to social change, economic development and the self-fulfilment of every human being; increased participation of the community in educational activities; certain advances in adult education; the gradual acceptance of the idea of life-long education and, above all, greater interest on the part of students and young people in their own problems and in the problems of society in the countries of Latin America and the Caribbean.

Measures required to ensure the democratization of secondary education

115. The Commission, after hearing the speeches made and studying the large number of draft resolutions submitted, considered a series of measures calculated to improve the situation described.

116. Having regard to the fact that circumstances varied considerably from one country to another, the principle was adopted that the democratization of secondary education should not be based on uniform standards and strategies applied to the entire region, but on differentiated ones closely related to the degree of development reached in each country and to the policies and plans adopted to improve it. The democratization of education would thus be advanced to the extent to which each country adopted measures for its socio-economic development and for the full implementation of human rights.

117. With regard to educational activities proper, it was clear that the task facing educational planners was that of making the democratization of education possible at secondary level by really universalizing access to primary education. This is where each country must establish its own goals and strategies, taking into account the existing regional imbalances as well as the need to provide educational services and assistance to very young children who would have no chance of developing their personalities in adolescence if they lacked proper food and a favourable family environment early in life.

118. Depending upon the circumstances prevailing in each country, substantive reforms should be carried out or a policy of constant revision of the structure of the educational system should be followed, including the necessary reforms and innovations in secondary education that are mentioned in the following section.

119. There was agreement on the need to take definite steps for the renewal of secondary education, as regards the spirit imbuing it and the teaching methods used, which should develop in the student a critical as well as a creative attitude, and also as regards the content of the curricula, which should conform more closely to the technical and social requirements of a changing world.

120. Measures to promote the pre-service and in-service training of teaching staff, as well as their suitable supervision, deserve high priority. Educators should receive continual assistance in putting into practice the principles of democratic education and in contributing to the proper widening of educational opportunities. The training of the present-day teacher, who feels himself to be responsible solely for imparting a pre-established body of knowledge to a supposedly homogeneous group of students, must be replaced by the training of a versatile educator who is creative, anxious for self-improvement, capable of using modern technological aids, prepared to take part in all kinds of out-of-school activities and community extension work, and sensitive both to the individual requirements of his pupils and to those of a dynamic society.

121. Finally, new life must be instilled into social and educational research so as to allow of the scientific planning of the quantitative and qualitative aspects of a generalized secondary education. All of these tasks, including research, the evaluation of experiments, documentation and the dissemination of information, must be carried out at the national level. But there is also broad scope for action by Unesco at the regional level, principally as regards further training for research workers, statisticians, planners, documentalists and other high-level experts needed for educational systems that are constantly expanding.

8.2 Innovation and reform at secondary education level

122. In dealing with item 8.2 of the Agenda, the Commission noted firstly that, while there are historical and cultural bonds between the countries in the region, endowing them with certain similar features, there are nevertheless, between one country and another, differences in the conception, organization and administration of the educational systems. It follows that the ideas on innovation and reform set forth below should be adopted in each country to the extent that they do in fact contribute to the development of the country's own school system.

123. As a prerequisite to innovation and reform, the Commission recommended that educational systems be constantly reviewed and evaluated. This calls for the development of information facilities: both internal (statistical data on whatever may be quantified; and assessments of quality based on supervision and on proper analysis and evaluation), and external (documentation and information centres, comparative studies on education, exchanges of teachers). Also required is improved co-ordination to achieve better use of the mass media of communication. In addition, it was recognized that this constant process of evaluation must be co-ordinated with planned research on the development of education. Indeed, any innovation may be considered as a two-way movement between research and action.

124. In the Commission's view it was obvious that innovations and reforms in the school system must take very fully into account the social, economic and cultural circumstances of each country. Particular attention should be paid to surveys of human resources and development plans, so that organizational reforms and pedagogical innovations, especially in the content, method and nature of teaching, may be adapted to the foreseeable requirements of the labour market and the fluctuations of that market. This does not imply that education is confined to the training of producers. The basic concern of any system of education must always be man in all his aspects. But, in any reform bearing on secondary education, regard must be had to the openings likely to be available to pupils at an age when they begin to think of the kind of profession or occupation they wish to take up.

125. In addition to being adapted to the particular circumstances of each country, educational reforms must be in keeping with the characteristics of our time, including frequent change due in large measure to the advances of science and technology. These changes have repercussions on the labour market: new and sometimes unforeseeable needs arise for particular skills, engendered by changing ways of life and social conditions. The objectives of any well-planned educational reform must include preparation for change, as well as flexibility in its structures and content, so that it may be able to meet the varying needs arising from social, scientific and technological change.

126. Attention was repeatedly drawn in delegates' speeches to the importance of national cultures as reflecting the history and values of each individual people. These values should have their place in any educational reform, so that the nation's cultural heritage can thereby be passed on to, and in due course enriched by, the coming generations.

127. As has already been noted, several countries in the region have embarked on reforms in the structure of the system, usually consisting in the institution of a period of general basic education followed by a diversified period offering a growing number of specializations. In determining the latter, regard must be had to the real needs of the country and the demands of the labour market. School authorities must keep a close watch on changes in the labour market so as to make the necessary adjustments, creating new specializations or eliminating others.

128. To achieve greater flexibility in the educational system, it will be necessary to review the way in which each level of education is linked up with the previous and the following levels, and to institute arrangements for switching options within a given level. The value of the resulting adaptability to individual needs is borne out by the fact that the idea of diversification now receives wide acceptance, as is illustrated by the creation of comprehensive schools.

129. In connexion with the linking up of the various levels and options in the educational system, provision should be made, in the diversified period, especially when the latter is leading to a professional occupation, for possibilities of further training, updating and promotion in the exercise of the trade or profession. These possibilities should be programmed at the same time as the basic vocational training, although the moment when effect should be given to them may, in each case, be decided in the light of circumstances.

130. The Commission took note with satisfaction of certain reforms that had been undertaken after their scope and purpose had been widely publicized, and following consultations with all sectors of the population in the different areas of the countries concerned. This was considered to be the right approach to any overall reform of education and even to innovations of lesser importance. It was thought that the implantation of reforms and innovations could be greatly assisted by participation therein by young people - who, after all, would be benefiting directly from them.

131. Forthcoming innovations, introduced during the next few years, should be designed to improve the educational opportunities open to rural people and to underprivileged groups, with the final aim of achieving parity with the urban areas. Also needed are flexible methods of education for adults who are unable regularly to attend classes, and appropriate methods for the recovery of drop-outs. This will require greater adaptability in the school system and a massive recourse to out-of-school education, with facilities for transference from one to the other.

132. Without disregarding the socializing function of all educational processes, it was thought that the flexibility demanded of structures, curricula, evaluation and promotion should be based on technical innovations leading to an increasingly individualized teaching, in accordance with the aptitudes, interests and learning speed of each student. Several teaching techniques can be of assistance in this respect: programmed learning, textbooks, sets of teaching aids for individualized experiments, work with individual cards, self-evaluation tests and self-correction guides, etc. However, while these methods are easy to apply and save both teacher and student much time and effort when they are used, they are difficult to develop for a particular population. Any reform should therefore begin with a programme for the preparation of these instruments, in close co-operation with educational research centres.

133. The programming of educational activities should be centred around certain instrument-handling skills rather than being concentrated on the traditional arrangement of curriculum content according to subjects. Among these skills, critical reading, interpretation of maps, blueprints and charts, the use of dictionaries and up-to-date information digests, oral, written and other means of expression, and training in debates, team work

and group administration should be considered basic.

134. Technology offers educational reform various media of communication that can be applied to different circumstances and occasions. Their great efficacy and their relative freedom from limiting factors such as time and space, make them valuable aids to the democratization of secondary education. Indeed, they spread the benefits of education, the advances of science and technology and the manifestations of culture to distant areas and sectors of the population usually deprived of such privileges.

135. All innovations should be introduced by staff that is not only trained in the necessary skills but also, and more particularly, endowed with a favourable attitude towards change and towards the aims sought. With this end in view, it would be advisable that institutions for the training of teachers and specialists be involved in the study, planning and implementation of reforms, so that they may become identified with the goals and values aimed at. Particular attention should be paid to the training of administrative staff for the education sector.

136. The Commission considered the rôle to be played by teachers at a time of constant change in the scientific and cultural content of curricula. Teacher training should lay less stress on content, which can be communicated by other means, and more on the rôle of the teacher in guiding pupils, observing their behaviour, organizing and systemizing their work and awakening in them an awareness of moral and social values.

137. The Commission noted with satisfaction the experiments being conducted in several countries to achieve better integration of general education and productive work. In this respect, increased participation of educational and vocational guidance services would be desirable, so as to derive the maximum benefit from those experiments, with a view to identifying pupils' vocational inclinations. It was believed that services and activities that help individuals to find the kind of work most suited to their capabilities and interests serve the democratization of secondary education.

138. Educational research will have to play an increasingly important part in educational reforms and innovations. One criterion that should govern future research is that it should indicate to what extent the changes introduced in organization, in content, in methods or in teacher training, favour the democratization of secondary education - a task which, because of rapid change and the overlapping of trends and innovations, must often be accomplished within a short time. Furthermore, research should be directed at both internal and external factors affecting the school system.

8.3 The teaching of science and technology - including agricultural education - in secondary education, in relation to development needs

The teaching of science and technology at the secondary level

139. Participants were of the opinion that the improvement of scientific, technological and technical education at the secondary level were of special importance to the region.

140. The pace of change in scientific knowledge and technological applications constitutes a real challenge for the countries of the region; on the one hand, the present shortcomings in education must be overcome and, on the other, it is necessary to train manpower able to use the new and ever-changing technologies.

141. It was also agreed that the quality of science teaching at the secondary level was a major factor in influencing students with regard to the pursuit of scientific studies at the higher level. Countries in the region should therefore make a special effort to expand and improve scientific and technological educational services at the secondary level. In short, it was emphasized that at all levels and in all types of education, students should be prepared for life in an age of major scientific and technological advances.

142. Planned, concerted action to train technicians at the secondary level, both men and women, is crucial for the countries of the region; it was believed that this manpower might have a multiplier effect and would speed up development.

143. Without underestimating the enterprising work done in various countries by institutions for out-of-school vocational training, it was thought that technical and vocational education should form part of the general educational system. In this respect, the Commission found paragraph 7 of the Recommendation on technical and vocational education, adopted by the twelfth session of the General Conference of Unesco, very appropriate. This paragraph is worded as follows:

"Technical and vocational education should be an integral part of an overall system of education and, as such, due consideration should be given to its cultural content. It should do more than train an individual for a given occupation by providing the persons concerned with the necessary skills and theoretical knowledge, it should also, in conjunction with general education, provide for the development of personality and character and foster the capacity for understanding, judgement, self-expression and adaptation to varying environments. To this end, the cultural content of technical and vocational education should be set at such a level that the inevitable specialization in technical and vocational education does not stifle broader interests."

144. It was, moreover, clear that the structure of secondary technical education should follow on from a general basic education, which in many countries already extends over 8 or 9 years. Another aspect worth considering is that of patterning technical education by areas (communications, mechanics, construction, etc.) which are gradually defined as studies advance, to achieve specialization in the last years of secondary-level technical education, or to lead to subsequent higher specialization. Whatever the pattern adopted, the student must "learn to learn", so as to be able systematically to assimilate new knowledge throughout his life.

145. In connexion with the planning of technical and vocational education, it would be extremely useful if secondary technical educational activities were co-ordinated with vocational training activities in the countries of the region; in this respect, it would appear logical to distinguish, in principle, between two types of training:

(a) training or retraining by means of short courses, especially directed at priority and strategic sectors, using special methods, to solve short-term problems;

(b) manpower training at the secondary and higher levels, through regular school courses, as a contribution to the satisfaction of medium- and long-term needs.

146. At the same time, some countries should define the various specialities, courses, studies or training they wish to develop in both systems, in the light of development attained to date, without overlooking in-service training activities, for concurrent and co-ordinated action, clearly identifying the part to be played and the responsibilities of each of the participating bodies; this planned action would, among other things, ensure a more rational use of existing resources and a closer relationship with production systems.

147. However, all these measures will be unsuccessful unless steps are taken to mobilize national and regional resources for the purpose of achieving a minimum level of development in the region; in addition, employment policies should be studied, defined and adopted in the light of the present and projected situation of the labour market.

148. With regard to the use of teaching methods in technical and vocational education, it was thought that active and experimental methods should be used. The use of such methods should not be restricted to so-called "practical exercises". In all subjects, and especially in the basic sciences, active methods are essential. The presentation of subjects in the form of problems is very important; the search by the pupil for technological solutions to the problems posed by the teacher, as far as possible taken from real life, plays a very important part in developing a spirit of scientific inquiry.

149. The remarks made concerning secondary education in general - in respect of teachers, financing, supervision, buildings and equipment, optimum use of available facilities, administration of education, and especially the need to integrate education with production - apply a fortiori to scientific and technological education.

Agricultural teaching at the secondary level

150. To deal with this topic, the Chairman of the Commission appointed a working party which submitted a number of conclusions and suggestions. These were endorsed by the Commission.

151. All the delegates observed that, in Latin America and the Caribbean, high priority should be accorded to agricultural teaching at the secondary level, on account of its important contribution to economic and social development. Agriculture is the mainstay of the region, involving as it does nearly half the labour force. But the share of the budget allocated to agricultural teaching falls far short of its real needs. Considering the contribution of agriculture to the gross domestic product, the sector is at a marked disadvantage by comparison with other sectors of the economy.

152. Agricultural income is inequitably distributed among the factors of production, to the detriment of the farm workers. As a result, rural populations are at a clear disadvantage by comparison with other workers. This problem is compounded by the inadequacies of rural education, as noted elsewhere in this report.

153. Most countries spend appreciable proportions of their foreign currency reserves on importing foodstuffs, a situation which is bound to get worse since the population growth rate is already higher than that of agricultural production. No Latin American country can hope to develop if there is no development in its agriculture and animal husbandry.

154. There are many factors accounting for increases in a country's national income. Among these, education is undoubtedly of major importance, developing as it does the potentialities of man.

155. It was generally recognized that agriculture and animal husbandry support growth and development in industry and in the services, but as the primary sector loses ground, an ever-widening gap dangerously develops in the national economy, with the result that rural areas become depressed and stagnant, and people leave them. In these circumstances, government action to promote the growth of national production should aim primarily at improving life in the rural areas.

156. The working party considered the present situation in detail and noted a great many problems and growth-restricting factors. On the basis of these observations, it submitted the following suggestions for action, which were adopted by the Commission.

157. Close and continuing relations should be established between agricultural production

services and economic and social development agencies, on the one hand, and institutions providing agricultural teaching at the secondary level, on the other. It would also be desirable to plan for the training of middle-level agricultural technicians in line with qualitative and quantitative requirements, and to decide where to locate agricultural schools and colleges.

158. The significance of full primary schooling in rural areas for subsequent agricultural education was unanimously recognized, as well as the need to extend schooling beyond the primary level. Adaptation of primary schools to their environment and raising of the standard of teaching are essential if agricultural colleges are to have a student body eager to improve their qualifications and not anxious to abandon rural life. A good rural school, moreover, can influence the attitudes and agricultural skills of the community, including those of adults.

159. The general goals of middle-level or secondary agricultural education can be summarized as follows: to serve the economic and social advancement of the people, to improve nutritional standards and to ensure the better use and conservation of renewable natural resources.

160. The technical and economic goals are: to train middle-level technical staff able to raise agricultural productivity; to help increase personal and collective income in rural areas as a way of attaining a higher standard of living; to teach middle-level agricultural technicians the basic economics of rural development, and the elements of modern management, and of the handling and marketing of agricultural produce; to afford opportunities for post-graduate agricultural training.

161. The social goals may be defined as: developing a spirit of co-operation and reciprocal help, fostering social mobility, strengthening occupational stability, and preparing man to fulfil his proper rôle in the dynamics of socio-economic development. To this end, middle-level agricultural education should train people to observe, analyse, make decisions, behave and learn how to learn. It should also encourage new attitudes and impart qualities of adaptability, efficiency and an organized approach to work, credit facilities, equipment, and indeed knowledge.

162. Agricultural teaching requires suitable conditions to enable it to fulfil its task: at each level, the educational profile necessitated by the requirements of development must be clearly defined. Teaching institutions must maintain programmes of experimental farming and keep in close touch with research and information services for rural development as well as other institutions interested therein. Contact with the community and other rural development services are highly educational, in that they stimulate students' powers of observation, investigation and analysis in real-life situations.

163. Many kinds of teaching staff must be trained, and at varying levels. First of all, teachers of technical agricultural curricula must have:

(a) knowledge of the properties of soils, scientific and practical, of plant and animal husbandry and of economics;

(b) familiarity with management of farms, both large and small, and with co-operative forms of organizations; and

(c) teacher training, including familiarity with teaching methods both in the school and in the field, especially as applied to instruction of farmers. In this way, such teachers will help to widen the influence and strengthen the impact of agricultural schools. Preferably, they should have received their training as agronomists or agricultural engineers specialized in teaching at a faculty of agricultural science or an appropriate agricultural teaching college.

164. A second requirement is for teachers of basic science, since this must be taught side-by-side with technical subjects and applied science. Here again, preparatory training of teachers must include a minimum of knowledge of agricultural science and of appropriate teaching methods, to avoid lack of co-ordination with the rest of the teaching programme.

165. Thirdly, agricultural technicians should receive some training in teaching methods. Such middle-level staff is essential for agricultural development; its members can serve as assistant teachers in agricultural schools, and as specialists in agricultural teaching for rural development projects, services or institutions.

166. Finally, there are the rural teachers with some agricultural training. Experience has shown that countries that have achieved a rapid agricultural development with extensive farmer participation mainly owe this to the remarkable teaching efforts of ordinary school-teachers, often the children of rural workers. This points to the desirability of including an elementary knowledge of rural and agricultural teaching methods in these teachers' own training.

167. The foregoing indicates that the reform of middle-level agricultural education must be accompanied by an exceptional effort to train specialized teachers at agricultural teacher-training colleges or centres.

168. In conclusion, with a view to overcoming the many problems involved in agricultural teaching at the secondary level, emphasis was placed on the need for evaluations and studies aimed at defining the objectives of this form of education, at developing it, and at improving the provision of specialized schools and increasing their efficiency. The renewal of its structures and content was also required, and it should be supplemented by programmes of education for rural development, so as to be fitted to contribute to the modernization of agriculture. Finally, close co-ordination should be established and maintained between ministries of education, ministries of agriculture and other bodies responsible for agricultural and rural development.

PART IV

REPORT OF COMMISSION II

169. Commission II, chaired by Mr. Victor Bravo Ahuja, Secretary of Education of Mexico, elected Professor Juan Mier Fehles (Cuba) and Professor Juan E. Riveros Roldán (Paraguay) Vice-Chairmen, Dr. Jaime Ayala Ramirez (Colombia) was elected Rapporteur. The Commission held five working meetings, on 9, 10 and 11 December, to study items 9 and 10 of the agenda, dealing with:

9. Regional co-operation in higher education, with particular reference to the teaching of science and technology, including agricultural education;

10. Regional co-operation in scientific research in the university.

170. At the Chairman's request, the Director-General's representative, Mr. Amadou-Mahtar M'Bow, presented the two above-mentioned agenda items in detail. He pointed out first of all that agenda items 9 and 10 were closely related and that consequently there might be similarities and repetitions in the working documents submitted, but went on to explain that this might make it easier to deal with the subjects, since they would be examined separately.

171. He informed the participants that they might consult two publications which had been useful in preparing the working papers for the Conference: namely, the records of the third meeting of the standing conference of directors of national councils for science policy and research of the Latin American Member States, held in Viña del Mar (Chile) in July 1971 - part of which material had been used in the preparation of Chapter VI of document UNESCO/MINESLA/3 - and the records of the World Conference on Education and Agricultural Training which had been organized under the auspices of Unesco, FAO and ILO, and held in 1970 in Denmark, and whose recommendations had been taken into account by the group of experts responsible for the preparation of the working papers.

172. Participants also received, for the purpose of information, the volume entitled "Contribution of agricultural education in Latin America" containing the results of seminars convened by Unesco in Costa Rica and Colombia in 1970, and the "Guide to out-of-school science activities" prepared by the Unesco Field Science Office for Latin America.

173. The Director-General's representative observed that, in the past ten years, higher education had made spectacular progress in Latin America. Student enrolment had risen from 840,000 in 1960 to over 1,400,000 in 1970. However, this expansion was not reflected in the scientific and technological disciplines, where the relative percentage of enrolment had decreased during the period in question.

174. The difficult situation in which most of the countries of the region found themselves, due to the deterioration in trade conditions and the rise in the external debt, together with the population explosion and the legitimate aspirations of the workers, made it hard for many countries to assemble the necessary means for the creation of the infrastructure and equipment needed for the adequate development of research and science education. This pointed to the desirability of seeking co-operative solutions, which in the case of Latin America could be founded not only on a deep-rooted cultural identity, but also on a similarity of aspirations.

175. In a world dominated by science and technology, and in which progress consisted in enlisting science in the service of mankind, any delay in the development of education and scientific research was bound to become a factor unfavourable to development as a whole.

176. Mr. M'Bow concluded his statement by pointing out that in the present situation of the region it was clear that the efforts being made for the development of education, science and technology should make it possible not only to bring about a more dynamic economic growth, thereby raising the standard of living of the population, but also to achieve a better social integration by means of education.

177. An objective evaluation of the present systems and, in many cases, the development in

education of a trend towards new and original forms, the elimination of old categories and of some traditional methods, and in particular, the reform of university teaching - it was in these directions that efforts should be made to achieve the desired changes.

178. Following the statement by the Director-General's representative, the discussions began. The main positions and trends that emerged from the deliberations may be summarized as follows.

179. The participants considered that, in the light of society's present and future needs in respect of university staff for the teaching of science, technology and agriculture, to enable educational establishments to make an effective contribution to the social and economic development of the countries of the region, it was necessary that the improvement of science teaching should begin at the primary level with a view to attracting an ever-growing number of pupils to the science disciplines.

180. The adaptation of institutions of higher learning to the needs of society can only be achieved by means of continuous dialogue and co-ordination between universities, planning bodies and the productive sector. However, it is necessary to bear in mind that the development of science and technology is of secondary importance as compared with man himself, whose advancement is the ultimate aim of any development. It was agreed to recommend that the National Councils for Science Policy and Research should always take account in their plans, of this social and human dimension of knowledge, and that both they and the institutions of higher learning should endeavour to procure the inclusion of the social sciences in the curricula of scientific and technological courses at the higher level.

181. In all the countries of the region, it is necessary to improve and develop both university and post-university education. In view of the disparities existing between countries, the simultaneity of this endeavour calls for a clear and precise definition in the case of each of them, based on the development achieved so far; however, no country can achieve a genuine overall development unless it can itself devote intense and systematic effort to developing science and technology. And it should be borne in mind that outside aid and co-operation can only support the effort; while obviously valuable, they can in no way replace a nation's own determined effort.

182. In the context of regional co-operation some countries are already offering their material and human resources for the benefit of the development of the region's science and technology; they are making available to other countries their existing advanced centres for study and research.

183. In some cases, and in respect of certain disciplines, co-operation will have to be initiated, while in other cases it need only be intensified. The two most immediate and effective ways of effecting this are the exchanges of teachers and of students. To broaden opportunities for fellowship holders from the less-developed countries, employment might be offered them as a form of regional co-operation during their stay in the host country. However, measures should be taken to ensure that such students return to their homeland once they have completed their studies, in order to fulfil their obligations towards their own communities. At the same time, the countries concerned will also have to improve the material and working conditions offered to their nationals so as to avoid a "brain drain" of qualified personnel.

184. The urgency and constantly increasing magnitude of the problems, and the slenderness of the resources available in most countries for coping with them, necessitate a study of the application of modern methods calculated to have a multiplier effect on the work of teachers. The adoption of new methods of communication for education will assist the integration of educational systems and, consequently, the integration of the countries of the region; in some cases, it will also provide opportunities for access to higher studies for persons hitherto deprived of that privilege.

185. The quality of higher education can be appreciably improved if experimentation and scientific research are intensified in educational centres. Encyclopaedic and theoretical programmes, still in force in many places, should be revised and either modified or simply replaced as quickly as possible. The need for more importance to be given in study curricula to higher mathematics and statistics was also emphasized.

186. The principal changes needed in higher education can only be brought about through a better training of the teaching staff, especially in those disciplines that have a strategic importance for development.

187. The participants expressed their concern over the serious consequences of the region's percentage drop in university students enrolled in science and technology, even though upswings were noted in a few exceptional cases.

188. This imbalance is aggravated by the fact that, at the post-graduate level, the percentage of students taking science and technology courses in the region is very low.

189. An exchange of views on approaches to scientific and technological research within the different educational systems of the region revealed that, after the undergraduate level, higher education may consist of:

(a) Basic or applied research, whereby the store of scientific knowledge is increased, as well as the number of researchers and high-level teachers;

(b) Professional specialization, for the acquisition of advanced mastery of new professional techniques;

(c) Courses for updating knowledge, which, in many cases, consist in some measure of research. These courses help to keep knowledge up to date in certain disciplines.

190. On the other hand, in most countries, post-graduate qualification is conferred after completion of specialized courses of study for which an initial university degree is a prerequisite; post-graduate studies usually fit into one of three categories:

(a) masters' and doctoral programmes;

(b) specialization;

(c) updating of knowledge (refresher programmes).

191. In any case, it is important not to confuse research work undertaken while preparing for a master's or a doctoral degree, with the activities of simple specialization, advanced training, or university extension work.

192. Some countries in the region do not have post-graduate programmes: this is considered to be most unfortunate for their scientific and technological development. The suggestion is therefore made that co-operation for research should basically be oriented towards the post-graduate level. University teachers and research workers could thereby be trained and, at the same time, the Latin American and Caribbean region would be helped to attain mature and self-sufficient status in science and technology.

193. Moreover, it was pointed out that the dynamics of change in science and technology, as well as their rapid rate of obsolescence, call for special and concerted action to increase and intensify post-graduate programmes. Not only the universities themselves, but also other institutions of higher learning and National Councils of Science and Technology, or similar agencies in Member States, have an enormous contribution to make in this regard.

194. Some participants urged, however, that the co-operation of international organizations - including Unesco - should be maintained at all levels.

195. Stress was laid on the need for research and post-graduate centres to be of such high standing as to ensure a suitable level not only in regard to the quality of the research work carried out but also in regard to the needs of the region. Some countries already offer studies in certain specialized sectors which have not yet been developed in other countries, either because of their complexity or because they belong to new fields of technological research and application. Such cases offered welcome opportunities for regional co-operation.

196. National and multinational centres already in existence, or yet to be established, should offer research opportunities to staff from both large and small countries in Latin America and the Caribbean. At the same time, it was thought that the participation of fellowship-holders in centres of the region would not cause difficulties of adjustment such as could frequently be observed when studies were made outside the region, in countries that were highly developed from the scientific, technological and economic standpoints.

197. The Commission studied the machinery for the regional and international recognition of studies and degrees described in the working paper, and took cognizance of the preliminary draft of the regional convention submitted in document UNESCO/MINESLA/4. It was agreed that an intergovernmental meeting of experts should study the draft convention, and that the conclusions of the meeting should be submitted to a diplomatic conference, for approval and adoption of the instrument.

198. Nevertheless, some participants considered that, in certain countries of the region, conditions were not yet ripe for a broad formula of recognition; it was also suggested that it would be desirable first of all to achieve internal integration and equivalence in some countries, particularly in those with a federal structure.

199. Another aspect of this question - which was considered with some reservations - was the possibility of extending work permits to fellowship-holders at the end of their studies in countries where courses are open to foreign students. It was considered that this required close scrutiny in each case.

200. In the course of the debate it became clear that there was a need for the establishment of a regional system of information concerning opportunities in higher education, which, in general, should be organized as described in the working paper, with the following functions:

(a) to compile and analyse detailed documentation;

(b) to disseminate information;

(c) to stimulate research on essential aspects of the operations and organization of higher education in the countries of the region.

201. It should be noted that several participants stressed the need for an inventory of higher education facilities in the countries of the region - particularly at the post-graduate level - so that they might be used to better advantage.

202. In examining possible ways of setting up a regional system of information, it seemed to the participants - as is reflected in one of the resolutions adopted - that it would be advisable to request Unesco to carry out as soon as possible a study on the best way of doing this. It was noted that bodies such as the Union of Latin American Universities might provide assistance for this purpose.

203. With regard to regional co-operation in scientific research in the universities, the participants agreed with the views expressed in Chapter VI of document UNESCO/MINESLA/3, which were based on decisions reached at the third meeting of the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, held in Viña del Mar (Chile). Regional co-operation in this sphere seems basic to the strategy that should be adopted by the countries for their overall development.

204. A useful debate on this item of the agenda served to clarify some of the views held by the participants: the prerequisite for research was an inquiring habit of mind which should inform the whole teaching-learning process.

205. It was also pointed out that post-graduate research should serve to support university teaching.

206. The following were defined:

(a) the spirit of critical inquiry, as an attitude, a way of seeing things, an essential condition for the existence of research, though not in itself necessarily constituting research;

(b) specialization, as a deepening of knowledge already acquired; again, not all specialization constitutes research;

(c) research, as the systematic creation of new knowledge, procedures or applications; all new knowledge should, as far as possible, be published as a contribution to the store of scientific information or to new applications and procedures discovered through research, which are of benefit to the production system.

207. In view of the complexity of present-day research, it seem advisable, in some cases, to develop selected priority areas of research, with a clear division of responsibilities between university institutes and public and private research institutions.

208. There was general agreement on the important part that universities in the region should play in connexion with research; it was thought that they should be responsible for basic research and should participate to some extent in "research for development", which depends on the particular conditions in each country. Nevertheless, to make this possible, it was in general considered essential to increase substantially the funds assigned to research. According to information supplied by participants, only one country in the region devotes 1.2% of its GNP to research; in other countries the figure is no more than 0.2% to 0.5%.

209. The contribution of universities to research work will not be satisfactory until their functions and aims in relation to research are first defined, and the way in which they can carry out these functions and attain the proposed objectives are duly examined. A dual process is thus involved: on the one hand, the structure of the university must be modified and internal changes introduced so that it can carry out the new activities which fall to it; on the other, institutional changes, external to the university, must be made so that it can take its proper place in society and interact with other bodies responsible for the planning and implementation of national reform and development policies.

210. With large numbers of highly qualified personnel equipped with up-to-date knowledge, it will be possible to meet the needs of development and to achieve scientific and technological independence. Emphasis was placed on the need to create a genuine "infrastructure" for post-graduate work.

211. The training of a "critical mass of research workers", the availability of appropriate material resources, and the promotion of interdisciplinary research, are essential to the establishment of continuing and productive research work.

212. Just as university institutes provide the community with research services and technological innovations, it should become common practice - through agreements or other arrangements - for industry and the service sector of the economy to make their facilities and resources available to universities, thus sharing in the research work.

213. The definition or adoption of similar technologies by various countries of the region might facilitate joint technological research and applications.

214. The introduction of technological models should be carefully studied with the object of diminishing as far as possible, the disparities between advanced and developing countries. In all cases, the need to adapt technology to the principal features of the region should be taken into account.

215. Research in the region should concentrate on finding local and indigenous solutions that are both original and modern, so that no technological dependence will be created. The major regional problems should be investigated in centres situated in the region itself, with suitable participation by experts from the various countries.

216. It was suggested that regional research should specifically include research on food science and technology (agriculture, stock-raising, marine products, synthetics and biosynthetics); such research is of special interest to the region because large segments of the population still suffer from malnutrition. Other branches of research - geophysics, marine sciences, the ecology of border regions, hydrometeorology, etc. - are particularly appropriate for joint projects of concern to the region.

217. It was considered that the best research workers should be consulted by the various governments of the region for the purpose of drawing up study plans for science teaching (including the social sciences) at all levels of education.

218. The integration of plans for the development of higher education in plans for national development is no easy task. But the relation between labour requirements and available trained manpower should be constantly reviewed and adjusted. In some countries there was a glaring imbalance between the two.

219. The lack of job opportunities was an important factor in the brain drain; attention was drawn to other contributory causes: curricula based on foreign models and training that was not adapted to each country's needs.

220. It was of course desirable to adapt study

programmes and curricula to those needs, and, as far as possible, to the needs of the region.

221. The training of graduates should be more closely related to the social and economic situation; experiments should be undertaken with a view to developing a kind of teaching that has a real connexion with the conditions obtaining in each country.

222. Finally, the participants expressed the belief that it was one of the social functions of universities in Latin America and the Caribbean to uphold, study and stimulate the indigenous cultures of the countries of the region.

223. During the two meetings held on Saturday, 11 December, the Commission studied 32 draft resolutions submitted by participating countries.

224. The Commission had previously set up a working party to group those resolutions that could be considered simultaneously. With the agreement of the Commission, the working party, composed of representatives of Argentina, Brazil, Chile, Cuba, Mexico, Peru and Venezuela, put forward fifteen draft resolutions summarizing the main themes presented.

225. A lively discussion on these draft resolutions took place in the Commission, allowing of a broad exchange of views on the two agenda items under consideration. Fourteen resolutions were finally adopted.

226. It should be mentioned that the Commission considered a draft resolution submitted by Argentina on the recognition and equivalence of degrees. The Commission took note of it and decided to transmit the contents, through the Unesco Secretariat, to the intergovernmental meeting of experts which was to study the draft convention prepared by Unesco on this subject.

227. The above-mentioned draft resolutions, which are contained in an annex, reflect the main topics discussed, namely:

in connexion with item 9 of the agenda: exchanges of teaching staff (DR. 18), establishment and maintenance of regional centres (DR. 20), marine science (DR. 21) food technology (DR. 22), post-graduate studies (DRs. 19-23), information and publications on science and technology in higher education (DR. 24), the universities and socio-economic development (DR. 25), workers' access to higher education (DR. 26), recovery of students who have abandoned their studies (DR. 27);

in connexion with item 10: national science and technology policies (DRs. 28 and 29), university research (DR. 30), regional co-operation in regard to science policy (DR. 31).

228. At the close of the meetings the Uruguayan delegation proposed that a warm tribute be paid to the Argentine Nobel prize winner and renowned scholar, Don Bernardo Houssay, who had died earlier in the year. All the delegations supported this proposal, and it was unanimously agreed that it be suggested that the Conference adopt it in plenary session.

PART V

REPORT AND RESOLUTION ON REGIONAL INTEGRATION IN LATIN AMERICA IN THE FIELDS OF UNESCO'S COMPETENCE

229. The President of the Conference, H. E. Dr. Enrique Pérez Olivares, Minister of Education of Venezuela, chaired the Working Party, which consisted of:
Mr. Alberto Eduardo Ham (Argentina), Minister of Foreign Affairs; Senator Jarbas Gonçalves Passarinho (Brazil), Minister of Education and Culture; Dr. Cordelia Navarro (Cuba), Chairman of the National Commission for Unesco; Dr. Victor Barbderis (Chile), Chairman of CONICIT; H. E. Mrs. Tula Bogram de Güell (Honduras), Minister of Public Education; Mrs. Jacqueline Wynter (Jamaica), permanent delegate to Unesco; H. E. Mr. Victor Bravo Ahuja (Mexico), Secretary of Public Education (later replaced by) Ambassador Jesús Cabrera y Muñoz Ledo; Dr. Leopoldo Chiappo (Peru), Higher Council of Education; Dr. Rafael Fernández (Venezuela), Director of Planning, Ministry of Education.

230. In opening the discussion, the Chairman listed the points on which the Working Party would have to take a decision before formulating conclusions on the questions put by the Director-General in document MINESLA/4 Add., which had been submitted to the Conference in compliance with resolution 5.6 adopted by the General Conference of Unesco at its sixteenth session as well as on the recommendations of the Evaluation Commission on Unesco's regional offices and institutes in receipt of aid from the Organization in Latin America and the Caribbean. To this end, the Chairman asked members to specify whether Unesco's action should be directed towards regional integration (in the fields of the Organization's competence) or rather towards an intensification of regional co-operation. He also mentioned the need for stating the criteria on which this action should be based - whether it should be designed to serve all the countries individually, or whether it should be sub-regional in scope. In either case, the short-term, medium-term and long-term objectives on which Unesco would base its future programmes in the region should be determined.

231. On the basis of the foregoing statements, and after considering documents MINESLA/4 and MINESLA/4 Add. and hearing the Director-General's explanations on the structure, functions and prospects of Unesco's regional offices and of the centres and institutions established with the aid of the Organization in Latin America and the Caribbean, the Working Party agreed on the following draft resolution, which was submitted to the Conference for its approval:

I

The Conference,

Declares that the integration of Latin America and the Caribbean is desired by all the countries in the region on account of their historical and cultural affinities and of their wish to strengthen the political independence of their peoples;

Considers that the renewal and development of education, science and culture are essential factors in the gradual achievement of the ideals underlying regional integration;

Considers that it is the prerogative of governments to determine how they will take part in the process of integration and the means of bringing it about, since these are political decisions;

Regional integration

Recognizes that regional co-operation is essential to integration and that it offers the most suitable framework for this process, and that Unesco, by the very nature of its aims and programmes, can make an effective contribution to the objectives of integration;

Recommends

1. That Unesco design and carry out its programmes in Latin America and the Caribbean with regional integration as the final goal;

2. That, to this end, the conferences of ministers which Unesco convenes in Latin America, as well as the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, include in their agenda the question of regional integration, so that the results achieved may be periodically examined and new lines of action proposed;

3. That, in connexion with the foregoing, Unesco adopt the following three main forms of action:

   (i) aid to projects dealing with problems and priorities common to all the countries in the region;

   (ii) co-operation with sub-regional entities set up by countries in a single geographical area anxious to make joint efforts for the advancement of education, science and culture. Practical examples of such arrangements are afforded by the "Andrés Bello" Agreement signed by the Governments of Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela, and by the sub-regional activities carried out by the English-speaking countries of the Caribbean;

   (iii) co-operation in projects of specific interest to a particular group of countries not necessarily situated in the same sub-regional area. In such cases, the concerted action by those countries and the relevant aid from Unesco would be governed by a functional criterion and based on a certain homogeneity in the problems, objectives and orientations pre-selected by the interested countries.

4. That Unesco's regional offices and centres in Latin America and the Caribbean continue and intensify their activities aimed at the educational, scientific and cultural development of the region, and that programmes directly related to the objectives of integration be undertaken or intensified. In this regard, the following guidelines are advocated.

A. Education

Unesco's Regional Office for Education in Latin America and the Caribbean (Santiago, Chile) should continue its essential work of training personnel for national educational planning and administration services, of carrying out studies on educational problems in the region, and of providing documentation and information services.

At the same time, it would be desirable for the office to carry out preliminary studies in connexion with integration plans (for instance, comparative analyses of the structure and content of educational systems), with a view to the possible co-ordination of those aspects on which agreement can be reached without prejudice to national prerogatives or peculiarities. Another task would consist in examining, in consultation with appropriate government bodies, the possibility of establishing a common Latin American final diploma for studies at secondary level. This diploma would either give the student access to higher education, or, in appropriate cases, enable him to exercise a profession. Similarly, the Regional Office might advise governments, at their request, in the preparation of projects relating to the recognition of equivalences in studies, diplomas and degrees; it might co-operate in the preparation of plans for assistance to the English-speaking countries of the Caribbean in the training of teachers of Spanish and in the spread of a knowledge of that language; it might also co-operate in the drawing up of teacher and student exchange programmes.

In addition, the Regional Office should foster co-operation in the field of education with the organizations of the United Nations system, with intergovernmental organizations with which Unesco has co-operation agreements, and with organizations and institutions engaged in carrying out integration programmes, on the understanding that it is for individual Member States to decide whether to accept the participation of such organizations and institutions in any national projects.

The Regional Centre for Functional Literacy in Rural Areas of Latin America (CREFAL) in Patzcuaro, Mexico, the Latin American Institute for Educational Communications (ILCE) in Mexico City, and the Regional School Building Centre for Latin America (CONESCAL) in the same city, each in its own sphere of

action, should continue to co-operate with the Member States of the region in those matters that the latter consider appropriate for the development of the integration process. In particular, CREFAL, might spread the ideals of integration through its adult education programmes and help to create a general awareness in the community of the need for integration, for the benefit of the peoples of America; ILCE should intensify the production and utilization of modern technological methods in education, in line with the particular needs of the countries of the region, and should accentuate the regional character of its programmes with a view to integration; CONESCAL, in turn, should increase the exchange of experiences and promote regional co-operation in school building research and planning.

B. Science and technology

Unesco's work in the field of science and technology, which is specially suited to the establishment of regional co-operation systems and projects, should further both pure and applied research by appropriate State institutions, or under their auspices in the case of collaboration with unofficial institutions. The Unesco Field Science Office for Latin America, at Montevideo, should promote the training of high-level personnel, co-ordinate multinational projects in the fields of science and technology, encourage co-operation between scientific institutions, technological research centres and industry in the region, and contribute to joint efforts which would help countries in the region to free themselves from the dependence and economic burden involved in using foreign materials and technologies.

Each in its own special field, the Latin American Centre for Physics, Rio de Janeiro, the Latin American Centre for Chemistry, Mexico City, the Latin American Centre for Biological Sciences, Altos de Pipe, Venezuela, the Regional Seismological Centre for South America, Lima, and the Latin American Centre for the Application of Science and Technology to Development, São Paulo, should continue and intensify the work they are doing in favour of scientific and technological integration.

The holding of a second Conference on the application of science and technology to development in Latin America, which the Director-General intends to propose to the General Conference at its sixteenth session, should be used as an opportunity for defining and establishing co-operative activities and methods leading to regional integration.

C. Social sciences, culture and communication

Unesco should lend its support to the organization of Latin American sociology conferences in order to foster the spirit of regional integration. The Latin American Social Science Faculty (FLACSO), Santiago, Chile, and the Latin American Social Science Research Centre (CENTRO), Rio de Janeiro, could make a very positive contribution to the objectives of integration by carrying out studies and research in a field such as sociology which, by its very nature, is directly concerned with those objectives. Stress was placed on the importance of disseminating studies and reports on encouraging examples and experiences of racial integration in the countries of Latin America and the Caribbean.

The Conference of Ministers considers that the studies on Latin American cultures initiated by Unesco are most valuable and are closely related to the aims of regional integration which governments have set themselves; it is therefore in favour of the continuation by Unesco of this project. For similar reasons, it is recommended that aid to the Regional Centre for the Study of the Conservation and Restoration of Cultural Property, Mexico City, should be continued. Unesco's projects concerning cultural tourism can make an appreciable contribution to improved exchanges and closer contacts between the peoples of Latin America and the Caribbean and their economic and social development.

In the Communication Sector, the Centre for Higher Studies in Journalism for Latin America, Quito and the Secretariat services of Unesco responsible for communication media, should assist in disseminating news of activities and plans connected with regional integration. It is also thought that, having regard to its aims, the Regional Centre for Book Development in Latin America, Bogotá, should, in planning its work, give priority attention to those projects which are most likely to further the aims of integration.

With regard to the study that Unesco is undertaking on the viability and planning of a regional South American system of modern communications, including satellites, for educational and cultural purposes, the Conference considers that it is for the governments concerned to determine in due time, what contribution this study can make to regional integration.

II

Harmonization of Unesco's activities and those of regional organizations for the furtherance of integration

The Conference takes note of the information contained in document UNESCO/MINESLA/4 Add. concerning Unesco's co-operation with regional or sub-regional bodies in Latin America conducting activities connected with its work, and endorses the views expressed by the Director-General to the effect that co-operation and co-ordination between organizations should take place at the national level, since governments enjoy the inalienable right to plan the development of their own countries and to decide what assistance they wish to receive and from which organization.

III

In the light of the conclusions and recommendations made by the Evaluation Commission on the operation of Unesco's Regional Offices and on the various centres and institutions established with the Organization's assistance in Latin America and the Caribbean:

The Conference,

1. Approves the Director-General's intention to proceed, as a result of resolutions adopted by Unesco's General Conference, with a progressive decentralization of the Organization's activities, so as to integrate them more fully into the life of the region and to make the Organization's programmes there more effective, and also approves the way in which the Director-General proposes to achieve this goal over the coming years;

2. Therefore recommends:

   (i) that the current functions of Unesco's Regional Office for Education in Santiago de Chile be gradually extended to include advising governments upon: plans for the reform and renewal of education, science teaching, higher education and participation in the preparation by countries of plans for aid to development, and that the Office be provided with the necessary resources for the efficient discharge of these new duties;

   (ii) that the activities of the Unesco Field Office for Science in Montevideo (with the title of Office for Science and Technology) be extended along the lines indicated in Part I of this resolution, and that the Office's staff be accordingly strengthened, allowing for the possibility of creating posts, in designated areas, for specialists in natural resources, who would be assigned to sub-regional duties;

   (iii) that the Unesco Regional Centre for the Western Hemisphere, in Havana, with the title of Regional Office, maintain its present functions of co-operation with National Commissions, assuming in addition, in the fields of culture and human sciences, responsibilities similar to those of the Santiago Office with regard to education and of the Montevideo Field Office with regard to science, without, thereby excluding the possibility of seconding specialists from Headquarters to sub-regions for the development of programmes for the preservation of the cultural heritage;

   (iv) that Unesco Headquarters continue to co-ordinate the region's activities in the field of the social sciences;

   (v) that Unesco consider the possibility of setting up in the region an Office for activities coming within the Communication Sector.

3. It is understood that Unesco's Regional Offices have no supervisory responsibilities in regard to regional centres in receipt of aid from the Organization to Chiefs of Mission or to project directors.

4. As regards the specific recommendations contained in the Evaluation Report, the Conference recommends to the Director-General that he take account of the reservations made by the Mexican delegation concerning the Regional Centre for Functional Literacy in Rural Areas of Latin America (CREFAL), the Latin American Institute for Educational Communications (ILCE), the Regional School Building Centre for Latin America (CONESCAL), and the Latin American Centre for Chemistry (CLAQ).

PART VI

GENERAL STATEMENT

232. The Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean, convened by Unesco and held in Venezuela from 6 to 15 December 1971, met at a moment of decisive importance for the countries in that part of the world.

233. In the Conference's view, emphasis should be laid on certain features of the situation at this time because of their implications for education: the growing desire of the peoples of the region for improvements, both spiritual and material, in their living conditions and for fuller participation in the cultural, economic and political processes; a firm resolve to achieve cultural and economic independence and political self-determination; a critical attitude on the part of young people towards the society in which they live, and concern for their own future within that society; an increasing awareness on the part of our countries of the need for achieving an integration that will enable them to assert themselves as a region, through the pursuit of common objectives and the dovetailing of efforts towards development; and lastly the conviction that education and educational policies should constitute a determined response to these concerns and aspirations.

234. In these circumstances, the Conference deemed it appropriate to draw up the following statement, in the hope that it may provide some guidance to governments and to Unesco in their future activities:

(a) Two closely related objectives should motivate and govern the educational activities undertaken by the governments and by Unesco in the region: namely, the democratization and the regeneration of education - democratization which while meeting the need to implement the right to education, is also indispensable for an effective democratization of society and for the development of all the talent latent in it; regeneration as representing a transformation in the orientation, structures, content and processes of education so as to bring it into line with the requirements of the various societies and the aspirations of individual persons in an era of rapid change.

(b) With regard to democratization, the Latin American countries have made a notable effort to extend access to education. In the brief span of the past ten years, total enrolment has almost doubled. It has increased threefold in secondary and higher education. The rate of increase in enrolments has been twice that of the school-age population and is the highest in the world. Such a rate of growth has neither precedent nor parallel in other regions.

Moreover, Latin America is the only region among the developing areas of the world where illiteracy has decreased not only as a percentage but also in absolute numbers. And noteworthy progress has been achieved in regard to the access of women and girls to education at all levels.

(c) However, this attempt at quantitative extension, which is a prerequisite for democratization, must be carried further if the goal of universal implementation of the right to education is to be reached and if about eight million children aged between 7 and 12 who are now deprived of schooling are to be catered for.

(d) Greater efforts should be made to provide a minimum of education for the 39 millions of illiterates still remaining and more especially for those in the younger age groups. Adult education cannot continue as an underdeveloped sector of education systems, at a time when it is sought to incorporate the broad masses of the population in the life of the country, enabling them to take part more consciously and more effectively in the political and economic processes. The members of those social classes that enjoy the benefits conferred by education should mobilize themselves to help the lack of basic education suffered by millions of their fellowmen, and to do the work that society was unable to give them at the proper time.

(e) Also in connexion with democratization and, at the same time, with the requirements of the countries' development, there is the problem of education in rural areas. It is in these areas that the

greatest disparities in the distribution of educational opportunities are to be found. The problem has long caused concern, but no intensive and systematic efforts have so far been made towards its solution. The Conference is aware of the various difficulties arising in rural areas with regard to the provision of effective education. However, some countries of the region have made attempts and launched pilot projects on a limited scale. Such action, if improved and extended to the national scale, might produce impressive results. Not only do the agrarian policies and reforms being applied by the countries of Latin America throw into relief the urgent need for the provision of educational facilities in rural areas, they are also calculated to awaken in the rural populations a desire for education which has hitherto been lacking.

(f) Democratization implies not only equality of access to education but also the possibility of continuing it up to levels that are satisfactory to the individual and to society. This is not the case in the region, where millions of pupils drop out for reasons connected with their socio-cultural and economic backgrounds or with deficiencies in the educational systems themselves. To achieve an appreciable reduction in the high drop-out rates, co-ordinated economic and educational measures must be taken without delay. In this connexion, a thorough review is needed of the traditional criteria used in assessing pupils' performance and deciding on their promotion. Educational systems, conceived in the past to cater for relatively small, homogeneous sectors of the population, must be re-examined in the light of present circumstances, in which they have to provide for masses of pupils with differing social and economic backgrounds, motivations, talents and interests. Hence the need for the regeneration of education.

(g) There is growing dissatisfaction throughout the region with regard to the educational systems - policy trends, curriculum content, methods, results. Many countries are taking steps, or proposing to do so, for a reform of educational systems, aimed at modernizing them and adapting them to the real needs of their peoples. The past decade, when attention was concentrated on expansion, should, and seems likely to, be followed by a decade of intense and systematic action directed towards an overall reform of the structures and the very substance of education.

(h) In regard to the structures, it seems imperative to rid them of their present rigidity which hampers both continuity and diversification in the educational process, and to bring them into relation with the various forms of out-of-school education and with the world of production and work. A revision of organizational patterns, undertaken from the point of view of life-long education at all levels, would allow of a global approach to the solution of the relevant problems.

(i) The content of education is in need of a thorough revision that will fit it to provide an overall training, for when an individual is frustrated and deprived of the possibility of self-fulfilment - which is the proper goal of all education - this is both unjust and injurious to society. This all-round education which has long been talked about, must be reinterpreted in the light of our changing times and of the special features of each country. It is an education which should fulfil the twofold function of transmitting to the pupil the cultural heritage of mankind while at the same time preparing him for the future: an education which brings to the individual an intellectual training, an awareness of the value of work, the development of his critical and creative abilities - with the overall aim of training his character and promoting in him the will to devote his knowledge and energies to the advancement of his society, so that he may find self-fulfilment as a man and as a citizen in serving the national and international community.

Educational methods should conduce to the institution of this new humanism in which cultural, scientific and technological education will be comprised in a coherent whole and which will take account of social and economic factors. These methods should be supplemented by the use of the modern media of communication, which technology has placed at the disposal of mankind and which broaden the range of educational opportunities.

(j) Reforms, however, both in their planning and their execution, should be carried out in conditions which ensure their success and effectiveness, since otherwise they may remain mere intentions or may be abandoned in mid-course. Among such conditions, a primary one is planning, a planning whose purpose is innovation. In recent years, notable advances have been made, throughout the region, in the matter of educational planning and its integration in planning for development. Nevertheless, it has become apparent that such planning must go beyond the phase of mere rationalization of the quantitative development of education and the allocation of resources. It must take on a new task of critical evaluation of internal efficiency and of the way in which educational systems are meeting the needs of the various countries, thus getting nearer to the heart of the whole problem of education.

(k) Another condition for the success of efforts towards regeneration is the availability of a number and variety of specialists, who are needed for the effective implementation of the reforms. To this must be added a new attitude on the part of teachers, who should be encouraged to support innovations by participating in them in the earliest stages, and on the part of all the sectors of society involved in the educational process.

(l) Regeneration should also be applied to the structures and methods used in the administration and co-ordination of education. In other words, the regeneration of education will have to begin with a thorough revision of educational administration.

(m) Lastly, it is essential that the whole process of regeneration should be based upon research and experimentation, and that appropriate institutions should exist to enable regeneration to become a permanent process. It is necessary that institutional instruments of research be set up to assist in the elucidation of the political choices on which planning depends, so that decisions will not be guided simply by empiricism and intuition, but by a rational and scientific analysis of facts and problems. This measure is urgent, and governments should devote to it at least one per cent of the total funds allocated to education.

(n) Another problem to which the Conference paid special attention was that of the rising costs of education and the difficulties that are likely to be encountered in future in going beyond the levels already achieved in various countries. It is improbable that governments and peoples will be able to go much beyond present levels, which are already considerable. Nevertheless, it is necessary to continue developing education quantitatively, so as to achieve both its democratization and the regeneration of its system. External aid will be useful and beneficial, but can only amount to a small fraction of the funds that must be provided by the governments. A tremendous effort of imagination and rationalization will have to be made, to deal with this situation and overcome the predicament of growing educational needs, on the one hand, and shortage of funds for meeting them, on the other. This is where planning and innovation can play a decisive part.

(o) In regard to the shortage of resources, the Conference expresses its concern over the effect, both present and perhaps future, on the economic development of the countries in the region, of the price of the latter's raw materials and its unfavourable trade situation, which were also bound to have repercussions on the possibilities of financing education.

(p) The part to be played by science and technology in the regeneration of education at all levels and of all kinds will to a large extent determine the contribution that education can make to the development of the countries in the region. Ultimately, it is the widespread mastery of science and of its applications that creates the gap between those countries that have this powerful tool at their disposal and those which, lacking it, are dependent upon the former.

(q) In connexion with international technical assistance, the Conference expresses its gratitude for Unesco's co-operation and effective participation in the efforts made by the countries to promote their educational, scientific and cultural development.

With regard to Unesco's activities in Latin America and the Caribbean in future years, the Conference offers the following observations, which it hopes will be accepted by the Director-General and approved by the General Conference of Unesco. In 1956, Unesco and the Latin American governments embarked on the implementation of a Major Project on the Extension and Improvement of Primary Education, which enabled them to channel both the Organization's activities and their own towards precise goals, and which in the decade 1960-1970 resulted in a considerable expansion of the educational systems in the region. The moment now seems to have come for Unesco and those governments to undertake jointly a similar effort, directed this time towards the regeneration of education. If it is to have a practical effect, systematic action in favour of regeneration must comprise the following basic elements: the promotion of educational research and experiment with a view to innovation and reform; the development of the scientific and technological components of education; the investigation of ways of overcoming the lack of co-ordination between school structures and the various types of out-of-school education, and of linking them with labour and employment problems, in the spirit of life-long education; the application of modern communication media to educational processes; the improvement of the processes of planning and administration of education, providing the latter with modern management techniques; and, finally, the training of the high-level personnel essential to educational planning and reform.

(r) It would be desirable that Unesco set up machinery calculated to assist the implementation of the recommendations of the Conference, undertaking in particular periodic evaluations in which authorized representatives of the countries of Latin America and the Caribbean would take part.

(s) The Conference expresses the hope that it will mark the beginning, in Latin America and the Caribbean, of a period of renewed endeavour which will enable education finally to become one of the active and effective means of bringing about the development that is needed by the peoples of the region.

PART VII

RECOMMENDATIONS

Reform and democratization of secondary education

RECOMMENDATION No. 1

The Conference recommends to the Member States:

1. That in promoting the democratization of education, they redefine the process in terms of the following characteristics and objectives:

   (a) life-long equality of educational opportunity for all, implying the elimination of discrimination in the provision of education, with the result that no one will be deprived of the benefits of education, of the opportunity to participate actively in the educational process and to contribute effectively to the creative cultural processes of society as a whole;

   (b) freedom of education, which presupposes, within the legal framework of each country, the right of every person to participate fully in the educational process, not only through the schools but also through a broad range of out-of-school activities integrated into a well-structured system of education guaranteeing the universal and permanent nature of the right to educate and to be educated, to the benefit of the people and in the full exercise of their sovereignty;

   (c) community participation, through which the full and effective representation and contribution of the main groups in society is ensured, in an educational process for which the State is responsible and in the management of educational services;

   (d) affirmation of the cultural identity of each of our peoples, meaning full openness to and acceptance of cultural developments and forms of expression originating from any ethnic group, any segment of the population, minority, etc. at the national level, and the elimination of every form of cultural domination between nations, which is perfectly compatible with cultural exchanges between nations, a necessary component of the process of selective assimilation of cultural resources;

   (e) effective universal access to basic education, guaranteeing educational services of optimum quality, in conformity with the policies and plans of each country in the region, aiming at a target of eight or nine years of general education and vocational training;

   (f) education for children from infancy until school age, which requires adequate nutritional and psychosocial aid and family counselling, and opens the way to the full development of their educational potential, particularly in the underprivileged sectors of the population;

   (g) widespread and continuing vocational training such as will open to everyone opportunities for further professional qualification and ensure the continued self-improvement of workers at all levels, while promoting the technical progress and well-being of the people;

(h) substantial raising of the average level of education of the population, especially in the underprivileged areas, in order that they may take part in, and contribute to, the social and economic development of their respective countries.

2. That the following be considered as basic aspects of the democratization of education:

(a) the economic and social democratization of society as a whole, through deep structural changes leading to the eradication of underdevelopment;

(b) close co-ordination between educational services and curricula and socio-economic development programmes at the national and district levels of each country;

(c) constant re-examination and adjustment of educational administration, and reform of systems for the financing of education, in order to obtain optimum use of human, material and financial resources;

(d) reform of educational systems, so as to enable them to meet in a constant and dynamic manner the social and economic needs of our countries, to assist the process of development and to adapt themselves to the requirements of modern pedagogical techniques.

3. That suitable activities be promoted in order to bring about:

(a) free education, including the absence of tuition fees as well as non-payment for educational materials and books. Similarly, scholarship plans and credit assistance schemes are necessary for students who are unable to support themselves;

(b) the expansion of out-of-school facilities which will make it possible to bring educational services to ever larger groups of the population;

(c) a rational distribution of new educational facilities, so that the people of the various districts of the countries may enjoy equal educational opportunity without racial, social, economic, political or cultural distinction;

(d) a reorganization of curricula and a regeneration of the spirit and methods of teaching/learning, so as to foster a creative approach in students that will enable them to play an active part in the life of the national and international community, with particular emphasis on the trend toward Latin American integration. This calls for the application of educational patterns, methods and techniques such as will make possible a broader range of education, a learning process based on dialogue and awareness, and the stimulation of active vocational training, permitting true flexibility and a constant renewal of the content of education with the creative participation of students;

(e) social mobilization by means of service by students and graduates, community action groups and other forms of collective endeavour for the benefit of the community, encouraging in particular participation by the groups of young people, who represent a valuable force contributing to development and whose numbers are so large in our countries in relation to the total populations;

(f) the use of the media of social communication for public education purposes, and access of the community to the dissemination of education and culture through these media;

(g) educational extension to ensure life-long education throughout the community, making the latter more aware of the need for responsible and active participation in the social processes;

(h) the establishment of organic models of educational services in accordance with the characteristics of each country, so as to enable the community to take a direct and active part in the management of educational services, and to allow of a rational use of direct or indirect resources for education within the various territorial boundaries;

(i) substantial improvement in the efficiency of school systems, reducing to a minimum the number of school drop-outs and repeaters;

(j) the establishment of permanent research and planning bodies to be responsible for keeping secondary education up to date within the overall educational system and in line with the development of our nations' economic and social plans;

(k) the regeneration of secondary education, in line with the modern approach of the active understanding of technology, and of the incorporation of study into the working world, increasing the number of options in professional training, both in academic and non-academic forms, with the aim of increasing its contribution to the preliminary and advanced training of the human resources needed for the development of the countries in the region;

(l) radical changes in the procedures for evaluation and promotion so that educational establishments can offer all students, with the help of guidance services, the widest opportunities for individual and social advancement;

(m) adoption of an organic policy for the pre-service training of teachers and for their continuing in-service training, with appropriate participation by universities, to ensure compliance with the qualitative and quantitative implications of changes inherent in the democratization of secondary education;

(n) the development of methods of on-the-job learning and courses of independent study, which should be evaluated, standardized and recognized by the State;

(o) the organization of educational centres and programmes aimed at encouraging appropriate student participation in the management of institutions and educational processes, in accordance with their degree of personal maturity, vocational leanings and social interests;

(p) increased access to educational services for women and active participation by women in the elaboration of educational policies, not only within the family circle, but also in local, regional and national communities. To this end, the widespread introduction of co-education and the appropriate development of adult education for women are most important;

(q) the adoption of measures tending, as far as possible, to bring the family closer to the school, so that it may be integrated into the educational process designed for children and young people;

(r) promotion of bilingual education in those countries which have ethnic groups with different native languages and traditional cultures underlying their individuality within the larger society. In this regard it is important to train teachers in a knowledge of the indigenous languages and cultures and in the preparation of reading materials and other teaching aids adapted to the needs and special characteristics of such groups;

(s) the full and rational use of existing facilities, whether school or communal, which can be employed in the service of education for the benefit of children, young people and adults;

(t) provision to all educational and cultural centres of the materials and services needed for the all-round education of students, in accordance with the development requirements of their own communities.

Having established in the preceding recommendation the considerations and the conceptual and operative framework for the democratization and reform of secondary education, the Conference proceeds to approve the following specific recommendations, numbers 2 to 17.

RECOMMENDATION No. 2

The Conference recommends to the Member States:

That, with the aim of promoting cultural development in education, and of ensuring that the latter is truly democratic, their cultural activities should consist in:

(a) the development of their own national cultural forms and values;

(b) the study of the cultural values of the sister peoples of Latin America and the Caribbean; and

(c) the critical assimilation of the best elements in universal culture, which should not be imposed from outside.

RECOMMENDATION No. 3

The Conference recommends to the Member States:

That, in those countries where conditions are favourable to the systematic linking up of study and work in secondary education, appropriate measures be adopted - as the best way to develop students technically and socially and to afford them the opportunity of helping to lay the economic bases of a new society - for the establishment of secondary schools in rural areas that will improve the quality of contemporary teaching methods.

RECOMMENDATION No. 4

The Conference recommends to the Member States:

(a) that measures be adopted that are conducive to a more effective participation of secondary level students in the educational and social activities of their respective countries.

(b) That the participation referred to in the foregoing paragraph be carried out through the student organizations that exist in the various secondary education centres.

RECOMMENDATION No. 5

The Conference recommends to the Member States:

That they support the exchange of specialists and information between agencies whose goals are:

(a) to prepare and give advanced training to teachers, technical experts and specialists in vocational training;

(b) to implement programmes in which new institutions at secondary level are tried out, and particularly the establishment of multivalent schools.

RECOMMENDATION No. 6

The Conference recommends to Unesco:

That, on the request of Member States, it organize missions to follow up and evaluate current reforms in the educational structures of the various countries, giving them wide publicity.

RECOMMENDATION No. 7

The Conference recommends to Unesco:

That it convene a meeting of experts in secondary education to prepare the bases for an organic regional programme of action designed to achieve a better definition and planning of secondary education, its qualitative and quantitative improvement, the further training of teachers, the training of the necessary specialists, the conduct of relevant research, and the promotion of technical meetings calculated to serve the above objectives.

RECOMMENDATION No. 8

The Conference recommends to the Member States:

1. Institute, under bilateral agreements between national centres, exchanges of personnel specialized in the retraining of teachers of science and technology;

2. Co-ordinate their separate activities for the modernization of science and technology teaching in order to avoid duplication of efforts, concentrating them upon particular areas (courses, teaching materials, bibliography, teaching aids, etc.);

3. Seek technical assistance from those national and international centres of acknowledged expertise in the improvement of science teaching; and

4. Exchange information on the different tasks being pursued by national centres or institutes, which will facilitate the planning of bilateral or regional agreements.

RECOMMENDATION No. 9

The Conference recommends to the Member States:

That they promote the organization and equipment from the higher grades of primary schools up, and particularly in secondary schools, of scientific and technical student interest groups designed to carry out programmes of theoretical and practical activities bearing any branch of science and technology on aspects related to the development of the country concerned.

The teaching of science and technology

RECOMMENDATION No. 10

The Conference recommends to the Member States:

That they co-ordinate their efforts at the national (Ministries of Education, Scientific Research Councils) and international levels for the promotion of out-of-school scientific activities;

That they adopt measures serving to institutionalize out-of-school scientific activities;

That they examine the possibility of providing training courses for teaching personnel specializing in that field.

To Unesco:

That the Organization co-operate with Member States in the establishment, elaboration and implementation of their programmes of out-of-school scientific activities, in collaboration with the United Nations, the Specialized Agencies and other suitable bodies;

That the Organization study the possibility of producing and distributing publications on out-of-school scientific activities and their development in the region;

That the Organization give financial support to the Field Science Office for Latin America commensurate with its scientific status to enable it to deal properly with the projects submitted to it as regards out-of-school scientific activities;

That the Organization designate one of its centres in Latin America to be responsible for co-ordinating science festivals, contests, expositions or fairs;

Recommendations

That the Organization promote exchange of prize winners between countries, and invite to the international events those teachers who take the most active part in the organization of science contests in each country.

RECOMMENDATION No. 11

The Conference recommends that Member States

Carry out very careful and thorough studies to determine the most adequate methods for the teaching of mathematics to children from the earliest age;

That the depth and scope of these studies be such that in their developmental perspective they consider all types and levels of instruction of the national education system;

That once the pertinent studies have been made, and subject to teachers and professors having first been duly trained, an attempt be made to introduce the most up-to-date contents, methods, etc., in those types and levels of instruction as permit of it, without waiting for the completion of the more general plan described in the preceding paragraphs;

That evaluations be made of the results of applications of the recommendation, for the progressive foregoing paragraph's adjustment as requisite alike of the general plan of the particular plan concerned;

That once the necessary preliminary trials have been carried out, the general application of the methods be genuinely universal taking into account the urban and rural sectors of education; and

That there be fairly regular exchanges of experiences with other countries of the region.

RECOMMENDATION No. 12

The Conference recommends that Unesco

Adopt the necessary measures to provide the Organization's financial support to permit of the holding of the third Inter-American Conference on the Teaching of Mathematics in Buenos Aires in December 1972.

RECOMMENDATION No. 13

The Conference recommends to the Member States:

That they take the necessary steps to introduce meteorological education into secondary school courses, both general and specialized. The climatology courses, normally given today, should also include, in addition to the elements of the phenomenology and of the atmospheric processes, the applications of meteorology for the community's development and economy.

RECOMMENDATION No. 14

The Conference recommends to the Member States:

1. That, separately or in groups, they revise the education being given in educational programmes and rural areas for the rural environment in the light of the changes taking place in structures and land tenure, as an essential requirement for the improvement of the present situation of the peasant population, so that they may be included in the processes of development and may enjoy the benefits thereof;

2. That they go beyond the purely functional training to serve the demands of the labour market by providing an agricultural education which shall make it possible to free the rural population as a prerequisite for conquering underdevelopment;

3. That they promote the inclusion in all rural schools of agricultural courses based on the advances of science and technology, increasing their rural education budgets for this purpose.

4. That each country make every effort to provide agricultural institutes and schools, at the secondary level with qualified teachers. To that end, teacher-training programmes and centres should be established in some secondary agricultural institutes and at the university level, slanted to education for development in general and agricultural training in particular;

5. That they step up the in-service training of the primary teachers working in rural areas to enable them to give their pupils a better initial agricultural education; this should be supplemented by the provision in all schools of the facilities to enable students to grasp and experience concretely the value which the agricultural activities represent;

6. That training centres be provided with practice units where students may gain experience in human relations, apply their agricultural knowledge and at the same time understand the socio-economic significance of the activities they are taught;

7. That each country co-ordinate the activities in education with those of other fundamental sectors so as to raise the overall standard of living of rural communities;

8. That they provide the means to establish in-service training programmes and incentives which, by bettering the lot of the agricultural teachers, will contribute to keeping them in their profession;

That Unesco:

1. In co-ordination with other interested international organizations, provide countries with the specific co-operation which the national, multinational and regional projects necessitate with the object of accomplishing the tasks essential for achieving the renewal of agricultural education;

2. That its co-operation be directed primarily to the following:

   (a) study of the structure of agricultural education in relation to agricultural development needs;

   (b) identification of the investments in intellectual aspects at all levels of agricultural education;

   (c) strengthening of the institutes for training instructors of agricultural subjects;

   (d) recasting of syllabi and curricula for secondary and higher level professional qualifications in agriculture and animal husbandry;

   (e) backing of national or regional experiments in the training of agricultural instructors and qualified experts;

   (f) introduction into the training of the teachers of the basic sciences of pedagogic elements tying it in with agriculture and agricultural development;

3. That, during the United Nations Second Development Decade, it give this subject high priority, operationally and financially, to the improvement of agricultural education to meet the serious problem of the backwardness of the peasant population and the limited social and economic development of the countries in the region;

Recommendations

4. That, with other international development agencies, it lend support to national projects for investments in this sector;

5. That, in its fellowship programme, it give the highest priority possible to professors of agricultural education.

Miscellaneous

RECOMMENDATION No. 15

The Conference recommends to the Member States:

That the Ministries of Education establish educational documentation and information centres in those countries which do not have an institution of that kind;

To Unesco:

That it take the necessary measures for the provision of financial support from the Organization to allow of the holding in 1972 or in the 1973-1974 biennium, of a course for the specialized staff of national centres in Latin America and the Caribbean, bearing upon the various aspects of documentation and information handling; and that it also organize a meeting of the directors of Latin American educational information and documentation centres; both events to be convened in Buenos Aires, Argentina.

RECOMMENDATION No. 16

The Conference recommends to the Member States:

That they give particular attention to the Third International Conference on Adult Education to be held in Japan in July 1972;

To Unesco:

That in preparing the working documents for this conference, due prominence be given to the interest shown and efforts made by the countries of Latin America and the Caribbean in the field of adult education, on the basis of the reports they have from time to time submitted to the Secretariat of the Organization.

RECOMMENDATION No. 17

The Conference recommends

That Unesco, OAS, the World Bank, IDB and the agencies and bodies providing international educational aid, offer greater and more effective technical and financial assistance to the educationally underdeveloped countries.

Regional co-operation in higher education and scientific research in the university

RECOMMENDATION No. 18

Exchange of professors

The Conference,

Taking into account the importance of scientific and technological development for the progress of the peoples, and the immense economic effort that each State will have to make in order to carry out such programmes,

Considering the need for a quantitative and a qualitative improvement in the staffing of university-level institutions and that this can and, as far as possible, should be done through post-graduate studies (master's and doctorate degrees),

Considering that there are in the region a good number of institutes already offering post-graduate courses in various fields and that use of such centres to develop human resources of the region would be efficient, rapid, inexpensive and highly productive,

Considering the advisability of fostering the exchange of teachers and scientists,

Recommends that Member States,

Through their organs for co-ordinating scientific and technological research step up, as far as possible:

(a) the pursuit of programmes for the exchange of teachers and scientists;

(b) the exchange of data and information concerning scientific and technological research of common interest including meeting requests of individual teachers and scientists; and

(c) the sponsorship of research of common interest with researchers from different countries in fields of special interest to the region;

That Unesco

Include the necessary measures, in the Programme and Budget for 1973-1974 and in the long-term programme; to set up the requisite machinery for:

(a) identifying the high-level university centres in the region offering regular master's and doctorate courses, and arranging for the publication and periodic revision of the list of such centres;

(b) promoting the exchange of teachers and scientists between university-level centres in the region; and

(c) making the national bodies for co-ordinating teaching and research activities to be also the co-ordinators in the regional ambit of the tasks proposed.

Establishment of, and support to, post-graduate study centres

RECOMMENDATION No. 19

The Conference,

Considering that it is necessary to promote and accelerate the development of science, technology and education with a view to achieving the total independence of the countries of the region,

Considering that in order to achieve development it is necessary to increase and improve the teaching of science and technology and to train the required qualified personnel,

Considering that in order to attain these objectives it is essential for the teaching to be given in high-grade centres of post-graduate studies,

Recommendations

Considering that the high standards and specialized resources which the creation of these centres require mean a pooling of effort by the countries in the region and the participation and support of the international agencies,

1. Recommends to Unesco and the States of the region the creation of centres for post-graduate studies, and the support of those already existing to serve the following ends:

   (a) promoting scientific and technological research in the priority areas for the development of the region or which is an essential complement for the teaching;

   (b) promoting the giving of specialized professional courses to qualify high-grade personnel in the critical areas for the developing nations;

   (c) promoting the updating of scientific knowledge in the most important fields of applied science and technology;

   (d) pooling and exploiting regional resources for the expansion of the above centres;

   (e) taking on periodically staff from the States in the region, to centralize knowledge with a view to reinforcing the nuclei already existing in the countries from which they come;

   (f) exploiting and exchanging knowledge and information in the fields of science and technology;

   (g) achieving, through the cultivation of science and technology the spiritual and intellectual independence of the countries in the region, strengthening their historical personality and forwarding regional co-operation;

2. Requests Unesco to appoint a committee of experts which, having regard to existing post-graduate courses in the countries of the region, shall, within a period of six months, submit a report covering the following points:

   (i) evaluation of these courses;

   (ii) selection of those centres and programmes that might receive support from Unesco in co-ordination with other international bodies;

3. Requests that one of these centres be located in Venezuela, in view of the offer made by that country to place its human and material resources at the service of the project.

Support for regional centres

RECOMMENDATION No. 20

The Conference,

Considering the great importance of the Regional Centres for the scientific development of the countries of the region,

Recommends to the General Conference of Unesco:

1. That in the Programme and Budget for 1973-1974 the Regional Mathematics Centre for Latin America, located in Argentina, be included among the centres that are to receive financial aid from Unesco, to give it the necessary funds to extend its activities in Latin America and the Caribbean;

2. That, once the agreement is signed between Unesco and the Government of Venezuela for the functioning of the Latin American Centre for Biological Sciences, the Programme and Budget for 1973-1974 include this Centre among those that are to receive technical and financial aid from Unesco so that it may have the necessary means to extend its activities in Latin America and the Caribbean;

3. That Unesco consider the possibility of expanding the programme of technical assistance for the Research Centre for Marine Sciences in the University of Panama and for other oceanographic research centres of the region.

Teaching of and research in the marine sciences

RECOMMENDATION No. 21

The Conference,

Considering that the development of scientific and technological research in the area of the marine sciences is of the deepest interest by reason alike of their intrinsic value and of their relevance for the production and the utilization of foods for the growing population of the continent; as also for non-renewable resources, and for shipping, weather forecasting, coast guard services, etc.

Considering that such research is particularly well suited to integrated research programmes for specific areas,

Recommends that the appropriate authorities in the Latin American and Caribbean countries place special emphasis on research and the training of multinational personnel, at all levels, particularly the post-graduate in the marine sciences, either in the existing educational institutions or by establishing new specialized centres;

That Unesco carry out the necessary studies to ascertain what educational, scientific and technological resources exist in the various countries of the region, with a view to exploiting the natural resources of such areas as the Caribbean, the Atlantic and the North and South Pacific; and, in collaboration with FAO and other international organizations, promote multinational programmes which, by intensifying and co-ordinating the work of the existing scientific and technological research institutions, will conduce to achieving a degree of development in marine sciences consonant with the massive needs and great possibilities of the different zones of the continent.

Teaching and research in food technology

RECOMMENDATION No. 22

The Conference,

Mindful of the nutritional problems of the basic segment of the Latin American population and especially of marginal groups,

Considering that it is urgently necessary to consolidate efforts throughout the region for the better progress of the scientific and technological knowledge which will permit of the training of specialized technicians in the nutritional branch of scientific and technological research, and

Aiming at pooling the efforts in this matter, both in respect of the transfer of this knowledge to the countries of Latin America and the Caribbean and of co-ordinated co-operation by international bodies such as the United Nations, Unesco, FAO and others,

Recognizing that the development of post-university teaching for the training of high-level technical and scientific personnel cannot neglect one of the most critical problems facing the Latin American people, namely malnutrition,

Recommendations

Recommends:

(a) that the Member States of the region include in their educational systems, at the university, post-university and polytechnical levels, the training of research specialists in agricultural, marine synthetic and bio-synthetic food technologies;

(b) that the Director-General of Unesco, in consultation and co-operation with the United Nations, FAO, and other international bodies, prepare a report on the co-ordinated action which the aforesaid bodies might carry out in support of the training of specialists in food technologies.

Post-graduate studies in the fields of science and technology

RECOMMENDATION No. 23

The Conference,

Considering the ever-increasing importance of post-graduate studies for the expansion and improvement of high-level personnel,

The existence in countries of the region of university-level institutions that offer opportunities for post-graduate studies, including courses leading to a master's degree or a doctorate,

The desirability of offering to an ever-greater number of professionals from the countries of the region the possibility of taking advantage of these opportunities, especially as regards advanced training for higher education teachers,

Bearing in mind the priority character of the modernization of science teaching at the secondary level in today's highly scientific and technological society,

The urgent need to enlist scientific and technological research as a regional development factor and the importance of post-graduate education in the training of research workers.

Convinced of the need to concentrate efforts on those high-level centres whose effectiveness and reliability are recognized in the area,

Recommends to Unesco:

That a special fund be found for Latin America and the Caribbean to provide fellowships for participation in courses of instruction and research programmes at post-graduate level. Voluntary contributions from Member States, and grants from international organizations or other sources could provide the finance for the fund;

And also addresses the following recommendations to Member States:

I. On university teaching courses

1. That the permanent education of graduates be promoted by steps to keep them in the fullest possible contact with the universities or with para-university centres of advanced studies;

2. That such permanent education be provided at refresher and an advanced or specialization level;

3. That the possibility be studied of promoting the periodical retraining of professionals, particularly those far removed from the major centres of learning or advanced studies, either by sending out travelling teams of highly qualified professionals, or by transferring them periodically to centres of advanced studies;

4. That steps be taken to promote the introduction of planned teaching courses in the universities to give the teacher complementary education and pedagogic training in his speciality.

II. On science teaching

1. That a system be established through bilateral agreements between national centres in the region for exchanges of personnel specialized in giving refresher courses to science teachers;

2. That they co-ordinate specific activities towards the modernization of science teaching, to avoid duplication of efforts and to concentrate them upon selected areas (courses, teaching materials, bibliography, teaching aids, etc.);

3. That they seek technical assistance of those national centres of acknowledged standing in the specific field of the improvement of science teaching.

III. On the promotion of post-graduate studies and the training of teachers for the university level

The Conference,

(a) Recommends to Member States

That the competent authorities give special importance to the establishment of planned systems of post-graduate study on the teachers of science, the social and human sciences, technology and agriculture;

That they encourage the adoption of integrated measures to achieve a concerted effort on requisite study plans and the training and advanced training of personnel for the university level.

That they co-ordinate their efforts at the regional level with the aim of establishing the bases of a Latin American system of post-graduate education and teacher training with a view to facilitating studies in highly-specialized fields where enrolments would otherwise be very limited because of the high cost.

(b) Recommends to Unesco that, in so far as available resources permit:

It actively support Member States in the preparation, execution and evaluation of national and regional projects for establishing the bases of systems or institutions of post-graduate education in science, the social and human sciences, engineering and agronomy, in co-operation with the United Nations Development Programme, the Specialized Agencies and other appropriate bodies;

It study the possibility of establishing and/or re-enforcing high-level centres in the universities of Member States at post-graduate level, for training and research in specialized areas of science and technology and of the social and human sciences;

It give special attention to the exchange of post-graduate students, supporting and developing the machinery that already exists for this purpose or setting up new machinery where necessary.

IV. On the establishment and development of high-level centres in national basic sciences and technologies and planning at post-graduate level

That encouragement be given to the development or creation of high-level centres in national basic sciences and technologies, using as a basis the local university or national and/or regional centres for applied research in those convergent multidisciplinary fields where no teaching is done.

Information and publications in the field of science and technology and of higher education

RECOMMENDATION No. 24

The Conference,

Considering that the World Science Information System (UNISIST) has features of particular interest to the developing countries, given the vital importance to them of full, rapid and effective access to the scientific data that are part of the heritage of mankind, and bearing in mind the recommendation adopted by the Unesco-sponsored intergovernmental conference on the setting up of UNISIST,

Convinced that UNISIST can only furnish the Member States with the assistance expected of it provided that they themselves have national, scientific informations systems or centres,

Considering also the urgent need for a system of a regional nature to facilitate exchange of experiences, stimulate innovations and help to develop relations between the institutes in the matter of higher education,

I. Regarding scientific information:

Recommends that the Member States of Latin America and the Caribbean set up national scientific and technological information and documentation centres capable of fulfilling the characteristic functions of such centres serving the Member States especially and taking into account the following aspects in addition:

(a) the exchange of scientific and technological information between the specialized organizations of the countries of the region, including service to specific research of common interest and to inquiries from individual professors and researchers;

(b) the dissemination of information on extra-academic scientific activities and their development in the region;

(c) information on modernization in science teaching, at secondary and higher level, and on work being done in national centres and institutes to that end;

(d) incorporation and utilization of the Scientific and Technological Documentation and Information Centres as elements in the World Science Information System (UNISIST), through active co-operation on the part of Member States and international organizations;

(e) economic and technical aid from Unesco to permit of a course for staff specialists in documentation and information procedures, including educational documentation and information.

II. Recommends to Unesco, with regard to information on higher education

The establishment of a Regional Centre for information on available resources in higher education, to serve the following purposes:

(a) to facilitate the application of a regional policy on higher education;

(b) to collect from all the States in the region up-to-date information about higher education;

(c) to carry out comparative studies in the matter, with awards of points;

(d) to process and publish information about higher education and to study the possibility of circulating the resultant publications throughout the region;

(e) to exchange experiences with other similar bodies;

(f) to provide guidance nationally and internationally on the system of compilation and statistical processing of information and publications;

(g) to circulate to all Member States the particulars concerning existing post-graduate study programmes already evaluated and to encourage the exchange of information and experiences in this field between the countries of Latin America and the Caribbean.

The Centre will carry out the following preliminary activities:

(a) working out the general lines of the organization and operation of the centre;

(b) urging on the countries of the region the need for generous collaboration for the creation and operation of the Centre;

(c) informing the States of the region about the basic objectives of the Centre;

(d) establishing the priority areas for information at the regional level;

(e) recommending each State in the region to carry out the work of collecting data about higher education and about legal instruments on the subject;

(f) examining the resources in qualified personnel and the finance necessary for the functioning of the centre;

(g) seeking the co-operation of international bodies on the technical and economic aspects;

(h) making an inventory of the existing information centres in the region.

Requests Unesco to make, as rapidly as possible, a study covering the various aspects relating to the creation of the centre;

The Union of Latin American Universities (UDUAL) and the Association of Caribbean University and Research Institutes (UNICA) could co-operate with Unesco in this task, as well as the Unesco Field Science Office for Latin America (Montevideo) and the Regional Office of Education (Santiago, Chile).

III. Recommends the establishment of a Latin American Centre for Scientific and Technological Translation and Publications, to be situated in the Member State offering the best facilities for that purpose.

Association of the universities with the socio-economic development of their countries

RECOMMENDATION No. 25

The Conference,

Considering that the teaching of science and technology, including agriculture, at university level does not meet the real needs of the countries of the region,

That the principal causes of this are the dissociation of the universities from the production and service sectors, the improper use of examples taken from foreign textbooks and the performance of experiments and exercises that have no bearing on real conditions in our countries,

That this situation has a decisive effect on both undergraduate and post-graduate training and is the reason for graduates' non-adaptation to the socio-economic realities of their respective countries,

Recommends to the States of Latin America and the Caribbean,

That they associate the universities with the life of their countries, procuring the systematic integration of professors and students in production and social service activities connected with their respective disciplines, in factories, hospitals, schools and farms, combining theory and practice, etc., which will contribute notably to the all-round training of the student body, to the up-dating of the professorate's knowledge and to the preparation of textbooks and curricula that meet the real needs of our countries.

Recommendations

On the inclusion of the workers in studies of university level

RECOMMENDATION No. 26

The Conference,

Considering that it is a social obligation and a developmental necessity for the countries of the region to provide genuine possibilities of access to education for the broad masses of the people, with no restriction other than the required standard of knowledge,

Considering that in the working masses of our peoples there is a considerable human potential traditionally disregarded, together with the ability and the will to achieve higher cultural and technical standards that would enable them to make a greater contribution to the creation of the material and spiritual wealth of the society,

Considering that workers' education has been a major concern of the most advanced and patriotic elements of the student body in our countries and of the highest representatives of the national cultures,

Recommends that the States of Latin America and the Caribbean,

Take steps to provide genuine access to higher education for all workers for which it is essential to ensure: close links between education and production centres, the use of the mass media, free enrolment and textbooks, organization of night classes, flexibility in admission standards and attendance at classes and development of an education appropriate to the concrete situation of the adult population.

Retrieval of students who abandon university studies

RECOMMENDATION No. 27

The Conference,

Considering that in those countries where the high drop-out rate at all levels of education and particularly at the higher level represents an appreciable loss of intellectual potential to each country,

Considering that this is one of the sources, perhaps the essential source, of the frustration of the young,

Recongizing the necessity for the States of Latin America and the Caribbean to make use of all their human resources, even those elements that may have been unable to complete their formal education for the achievement of economic and social development, and their moral duty to retrieve for society those young people who, for reasons beyond their control, have been forced to cut their studies short,

Recommends to Member States:

1. That their universities and teaching institutions study the possibility of modifying their curricula at the various levels, making them sufficiently flexible to cover the possibility of lateral outlets for students: for example, by introducing short courses, so that even if the student is unable to complete the professional course originally chosen, he can make use of his knowledge and fit into the community as a useful element;

2. That, in order to put this recommendation into proper effect multidisciplinary teams should be formed, comprising representatives of all the sectors concerned, to collaborate in the preparation and implementation of curricula which will meet the specific needs of these students.

Recommends that Unesco:

Support the requests made by Member States in connexion with the solution of this important social problem.

Scientific and technological policy

RECOMMENDATION No. 28

The Conference,

Considering that the countries of Latin America and of the Caribbean are feeling the impact of science and technology on their economic and social development, and that situations of cultural, scientific and technological dependence are thus created,

That it is appropriate that the countries of the region increase their effort in science and technology to achieve economic and social development,

That there are priority calls for joint research programmes, which shall permit the achievement of significant technological, economic and social impacts,

That there are certain considerations - such as the need to concentrate human and material resources, and to establish a genuine science policy in the said countries which shall contribute to triggering economic and social development,

That it is necessary to adopt a concerted position in the face of underdevelopment and of the other more powerful nations of the world, to constitute a scientifically and technologically-integrated region, of a level and quality unreservedly justifying such combined action,

That the international bodies should co-ordinate their endeavours and agree on programmes supporting the Latin American and Caribbean countries' desire for integration, and should identify areas and short- and medium-term objectives according to levels of priority for development,

Resolves:

1. To urge the countries of Latin America and of the Caribbean, in face of the challenge represented by the development of other more advanced countries and regions of the world, to adopt a policy of action in concert as a means of achieving their scientific, technological and cultural independence;
2. To invite the States of Latin America and of the Caribbean to allocate the resources needful and adequate for the advancement of science and technology in their respective countries and throughout the region, and to take priority steps to facilitate co-operation;
3. To recommend that Unesco, in conjunction with UNDP, increase its technical and financial assistance to support the pursuit of scientific and technological activities in the countries of Latin America and the Caribbean and that it contribute to facilitating the co-operation mentioned as an imperious necessity for the union of our nations.

RECOMMENDATION No. 29

The Conference,

Considering that it is necessary for the countries to study carefully the desirability of according primary importance to science and technology in the development process, which should be reflected in a clearly defined scientific and technological policy within a government's overall policy,

That countries' scientific and technological policies should rest on the basic principle of creating national awareness of the importance of research for our economic and social development, laying the foundations so as to promote the requisite conditions for scientific research and technological innovation and to optimize the exploitation of the resources which exist,

That the establishment of a science policy requires the existence of a special organ to prepare it at the highest government level, empowered to take political decisions, and enjoying complete freedom for the discharge of its functions,

That the scientific activities carried out in isolation in institutes, laboratories and universities are not providing society with the hoped for benefits, inasmuch as they have not been considered in the context of a complete system in which a diversity of sectors are represented,

Recommendations

That the training of technicians and scientists needed for the development of our countries requires far-reaching changes in the higher levels of education and automatically creates the need for adjustments in all stages of the educational process,

Recommends to Member States:

1. That countries' scientific and technological policy should be oriented towards escape from economic dependence and affording dynamic participation in national development, and it should likewise create the conditions for preventing any action against national sovereignty or security;

2. That the countries of the region which have not already done so, should establish, at the highest level in the State system, national organs in close touch with the bodies responsible for economic development planning, and with the required resources and adequate autonomy for orienting scientific and technological development by establishing priorities;

3. That the countries of the region effect the necessary transformations of the educational structure for adequate training of technicians and scientists, matching the dynamic changes in the country and the urgent necessity of promoting innovation;

4. That the countries of the region establish national systems of science and technology which shall constitute the sum total of scientific and technological activities planned and carried out by organizations and institutions in line with national policies;

5. That the indescriminate transference of technology should be replaced by a policy of creation, utilization and selective assimilation of technology which shall contribute to the development of the nations.

University research and its contribution to development

RECOMMENDATION No. 30

The Conference,

Considering that research is essential for the furthering of knowledge, which is one of the universities' basic responsibilities towards society;

Considering that research is a necessary condition for countries' socio-economic development,

Considering that a large part of the scientific and technical potential of the countries of the region is concentrated in the universities,

Considering that research, to be really effective for the purposes of raising the scientific and technical level of universities and representing an important contributory factor to the creation of the material and intellectual products for the community's enjoyment should be closely tied in with the real problems of the production and service areas such as factories, farms, hospitals, schools, etc., as well as, in general, with the economic development plans of their respective countries,

Recommends to the States of Latin America and the Caribbean:

1. That they endorse the requests made by the universities and give them effective support to afford a real possibility of maximum development of their enormous potential as regards scientific and technical research, encouraging the formation of research nuclei in order to provide the infrastructure essential for the scientific and technological advancement of the countries of the region;

2. That they create the conditions to permit of an effective linkage of university research with production and services sectors, encouraging full student participation;

3. That they lend their support to agreements between universities and/or scientific and technological research institutes in the region.

Regional co-operation in the field of science policy

RECOMMENDATION No. 31

The Conference,

Considering the importance, for Member States of Latin America and the Caribbean, of achieving scientific and technological independence through the establishment of science policies drawn up in terms of the respective countries' social and economic development,

Taking into account that this will only be achieved through strengthening the controlling bodies for science policy and research where they exist or through creating such bodies in countries that do not yet possess them,

Considering that intra-regional exchanges of information in this field are particularly important for establishing policies which, by promoting internal scientific development shall contrive to meet the needs of the countries concerned,

Considering also that the three meetings already held by the Standing Conference of Directors of National Councils for Science Policy and Research in Latin America showed that these activities offered ample opportunity for making scientific and technical co-operation more effective, at the international, regional, sub-regional and bilateral levels; and noting that, during the third meeting held in Chile in 1971, the Mexican Government offered to host the fourth meeting of the Standing Conference envisaged for 1973,

Recommends that Member States of Latin America and the Caribbean give their full support for the continuation of the work of the Standing Conference of Directors of National Councils for Science Policy and Research in Latin America and the Caribbean, and in particular for the holding of its fourth meeting;

Recommends that Unesco make the necessary dispositions for including this activity in its Programme and Budget for the coming two-year period.

ANNEX I

AGENDA OF THE CONFERENCE

1. Opening of the Conference

2. Election of the President

3. Adoption of the Rules of Procedure

4. Election of the Vice-Presidents and the Rapporteur-General

5. Adoption of the Agenda

6. Establishment of Commissions

7. Review of progress made in the education sector in Latin America and the Caribbean since the Ministerial Conference held in Buenos Aires in 1966

8. Reform and democratization of secondary education

   8.1 Democratization of secondary education

   8.2 Innovation and reform at secondary education level

   8.3 The teaching of science and technology - including agricultural education - in secondary education, in relation to development needs

9. Regional co-operation in higher education with particular reference to the teaching of science and technology, including agricultural education

   9.1 Improvement of higher education, particularly in the teaching of science and technology

   9.2 Development of post-university education for the training of high-level scientists and technicians

   9.3 Training of certain types of specialist

   9.4 Equivalence and comparability of diplomas and degrees

   9.5 Refresher training for higher education graduates

   9.6 Regional information system on higher education facilities

Annex I

10. Regional co-operation in scientific research in the university

    10.1 The university and its function in scientific and technical research and the place of research in the university

    10.2 Problems connected with scientific research in the university

    10.3 Priority areas for regional co-operation in regard to scientific research in the university

11. Regional integration in Latin America in the fields of Unesco's competence

12. Adoption of the final report

13. Closing of the Conference.

ANNEX II

OPENING ADDRESSES

Address by Mr. René Maheu

Address by H. E. Doctor Rafael Caldera

Annex II

Address by Mr. René Maheu,
Director-General of the United Nations Educational,
Scientific and Cultural Organization

Mr. President of the Republic,
Your excellencies,
Ladies and gentlemen,

It is a great honour and a keen pleasure for me to open the Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean.

May I first express my deep gratitude to H.E. Mr. Rafael Caldera, President of the Republic of Venezuela, who, by agreeing to honour this inaugural meeting with his presence, has shown how much importance he attaches to this Conference, to which his Government is so generously acting as host. We are happy to meet in this country whose dynamic qualities hold out much promise and whose hospitality we greatly appreciate.

I should like next to extend a welcome to the distinguished people who are here representing the countries of Latin America and the Caribbean, in company with the observers from other friendly Member States and the observer from the Holy See.

I cordially greet the representatives of the United Nations and the sister agencies of the United Nations family - the International Labour Organisation, the Food and Agriculture Organization of the United Nations, the World Health Organization, the International Bank for Reconstruction and Development, the World Meteorological Organization, the United Nations Children's Fund, the United Nations Development Programme - as well as the representatives of many governmental organizations, such as the Ibero-American Bureau of Education, and non-governmental organizations. I am most grateful to them for the interest they are thus showing in our efforts on this important occasion.

Lastly, I should like to express my special satisfaction at seeing here the representatives of the United Nations Economic Commission for Latin America and the Organization of American States, to which we are indebted for documents to which I am pleased to call your attention. These documents show how valuable the co-operation at the regional level, of these two organizations, is to Unesco.

Ladies and gentlemen, this Conference forms part of an already long series of conferences of Ministers of Education in Latin America: the Lima Conference, in 1956, which was to give a decisive impetus to primary education all over the continent; the Conference on Education and Economic and Social Development convened in Santiago, Chile, in 1962, whose conclusions led educators to direct their efforts towards development; the Conference of Ministers of Education and Ministers Responsible for Economic Planning in Countries of Latin America and the Caribbean, held in Buenos Aires in 1966, at which the importance of a qualitative improvement of education was realized. But your deliberations also follow on the Conference on the Application of Science and Technology to the Development of Latin America, held in Santiago, Chile, in 1965, of which the chief result was the setting up of the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, a co-ordinating body whose effectiveness deserves special mention.

When, at its sixteenth session, the General Conference decided, by resolution 1.132, to bring together for the Conference which is opening today the Ministers of Education and those responsible for the promotion of science and technology in relation to development, it showed clearly, on the eve of the Second Development Decade, that if education is to contribute to economic and social progress, it must not only give science and technology an important place but it cannot be dissociated from them. It was with this in mind that the provisional agenda before you was prepared. I should now like to refer, successively, to its main points.

You will first be called upon to review the progress made in the education sector since the Buenos Aires Conference in 1966. The results achieved since that time and, more generally, over the past decade, are such as to give you sound reasons for satisfaction. Between 1960 and 1970 the increase in school and university enrolments was decidedly

more rapid than that of the corresponding age groups; it reached 168% at primary level, 249% at secondary level and 258% at higher education level. As regards education for women and girls, the figures for these levels, which were 169%, 261% and 285% respectively, illustrate a welcome trend. The increase in female enrolments was particularly marked in industrial education. On the whole, the projections established for the decade in respect of school and university enrolments were exceeded, except at the secondary level. The pyramid of the educational system broadened upwards. The average duration of primary school attendance increased. The proportion of adult illiterates dropped from 33.9% to 23.6%. Generally speaking, therefore, the distribution of education is more democratic and better balanced. It is gratifying to see that the advance was particularly great in the case of that group of countries where enrolment rates were lowest in 1960, a fact which has helped to diminish the disparities between the different countries in the region.

Despite the encouraging progress made, however, there are still some reasons for concern. Although literacy work has gone ahead rapidly, the number of illiterates in the whole region is still about 40 million. Analysis of enrolments reveals the persistence of very high percentages of repeaters particularly in rural primary schools. In several countries secondary education is almost non-existent outside the big towns. All too often the teaching staff is still insufficiently qualified. As regards teacher training, while it has gone forward in that group of countries where the secondary school enrolment rate was lowest in 1960, it has fallen back in relation to general education in the others. In the same way, the percentage figures for enrolments in technical education have increased in only a few countries. In higher education, the proportion of students on the science side has increased very slowly, rising only from 4.2% in 1960 to 4.8% in 1970. Similarly, for students of agriculture, the figures were 3.3% in 1960 and 4.5% in 1970. Yet during this same period, in the sectors of letters, education and fine arts, the proportion of students rose from 19.8% to 25.9%.

Above all, the noticeable slowing down in the growth of enrolment figures, which is apparent from a comparison of the past five years with the years 1960-1965, denotes a certain flagging of efforts, many governments appearing to have reached the limit of their financial possibilities just at the time when the requirements of democratization, the need to remedy disparities within each country, the continual population pressure, and the arrival on the threshold of secondary, then of higher, education of ever larger numbers of children who have completed their primary schooling, are bound to impose additional and unescapable burdens on your countries. This situation, which may also be noted in other parts of the world, shows plainly that solutions to the problems arising from the necessary progress of education must be sought in new directions.

For example, the broadening of access to education does not mean simply providing, side by side with the existing school system, educational facilities for adults who have had no schooling; it means devising new structures that will do away with the frontiers separating formal education from informal education. It means recognizing the need for a life-long education that will teach men how to learn and make it possible for all of them to supplement and renew their store of knowledge throughout the course of their life. In this context, adult education - for so long at a disadvantage in the matter of budgetary appropriations - must no longer be treated as a temporary expedient aimed at redressing the shortcomings of traditional school education. Designed to provide a means of continuing - I repeat, continuing - adjustment to life, it supplements formal education, making it possible to lighten school curricula and contributing to the reform of teaching methods. This is the spirit in which preparations are going forward for the International Conference on Adult Education that Unesco is to convene in Tokyo in July/August 1972, and in which I hope that your governments will take an active part, since the subject is of vital importance.

Another major task - improvement of the efficacy of the educational system. This improvement cannot be achieved, either, by the mere application of conventional remedies: greater provision of schools, more thorough teacher training, more rational criteria for promotion, reduction of educational wastage and the lowering of excessively high unit costs. Fresh thought must also be given to the content of education, so that through its inherent motivations it may stimulate the minds of pupils and students and command their lasting attention. Action on these lines will lead to an improvement, not only in the internal efficacy of education, but also in its external efficacy, whereby it ensures that the young people who are being launched into society are properly equipped. At a time when young people, in ever-increasing numbers, are growing up in fear of unemployment or underemployment and do not always see their aspirations reflected in the society in which they are called upon to live, the integration of the individual in the national community constitutes indeed the yardstick by which in the last analysis the efficacy of any educational system is measured.

The nature of these problems suffices to show that we cannot be satisfied with partial innovations, such as those that would consist in applying a veneer of modern educational techniques over existing structures. The objective must be the total reform of education. This does not, of course, mean seeking innovation for its own sake or rejecting outright the existing systems. What should much rather be done is to bring about a synthesis of the new functions and the traditional objectives of

education, of the requirements of development and the humanistic values which your continent so rightly cherishes. It is in this way that we may hope to define more coherent educational policies, which will bring the different objectives of education into harmony with one another and with the economic, social and cultural objectives.

I am aware that a number of countries among you, alive to these problems, have set up special commissions to study them. From the world-wide point of view, the General Conference authorized me, as you know, to set up an International Commission on the Development of Education which, under the presidency of Mr. Edgar Faure, is carrying out extremely interesting work. I believe that the report which it is to submit to me in a few months' time will be of a nature to help governments, through its analyses and recommendations, to formulate - with strategies defined by reference to different types of situations - plans adapted to the achievement of the aims I have outlined. It also seems to me desirable that the Organization should be in a position to assist governments, at their request, in making a critical appraisal of their educational systems, in undertaking appropriate reforms - calling, if necessary, on the experience gained in other countries - and in creating or developing their own institutions for research and innovation. The Secretariat is already at your disposal for services of this kind, and I intend gradually to strengthen its capacity in this respect.

It is with this prospect of resolutely innovatory action in mind that, in my view, the problems before the Conference should be tackled. The reform of secondary education is thus seen to be an element of the overall reform of educational systems, and democratization, in your region as in the rest of the world, constitutes one of its major goals, intended not only to meet a requirement of justice but also to ensure that the best possible use is made of human resources.

This goal is, in fact, of particular importance at the secondary level, on account both of the population explosion and of the increase in primary school enrolments. But the democratization of secondary education cannot be confined to its quantitative expansion. It is also necessary to make up for the economic, social and cultural handicaps that children may have suffered and to take account of their personalities and aspirations, so as to enable them to develop their potentialities to the full, first at school, later on in society and more especially in the working world.

I should like, moreover, to emphasize that democratization is not compatible with the continued existence of an élitist system such as has become established in a number of countries due to criteria of selection and examination deriving from restrictive economic and social objectives, and as is reflected in the determination of the content of curricula and the general slant given to that content in accordance with the interests and values of governing minorities; or, again, due to the privileged status enjoyed by academic subjects which are claimed to be superior to subjects preparing for activities directly related to the economy.

Nor is there any real democratization if young people who have had to earn their living at an early age are denied access to the level of knowledge and training provided by secondary schooling.

In other words, any democratization worthy of the name demands a very great effort towards the recasting of the structure of secondary education, to fit it to make a more direct contribution to the general development of the community.

Viewed from this angle, the place assigned to the teaching of science, technology and agriculture, the regeneration of its spirit and its methods, take on a special importance, for on them depend the number and quality of the technicians necessary to development. The way in which these subjects are taught determines not only, to a considerable extent, the pupil's success or failure in examinations but often, too, his attitude towards these branches of study and even his vocation for the kind of career to which they lead. It is, moreover, essential that, by means of new structures, general education and technical education should become interwoven, so that they may foster a new scientific humanism adapted to meet the demands of our times. We may think that, at this juncture, what is needed, is less to impart scientific knowledge to large numbers of people than to inculcate a scientific spirit in them all.

At the level of higher education the same reasons militate in favour of a special effort with regard to the teaching of scientific subjects. Not only must this teaching be brought up to date; it must also be made less academic, more closely related to local conditions.

Moreover, the ideal of an integrated science teaching is tending to replace that of a compartmentalized form of teaching. In this respect the regional context would seem to lend itself to the establishment of a network of pilot projects in interdisciplinary science teaching.

The high cost of scientific, technological and agricultural education at this level, the vast numbers of personnel needed for economic development, the emergence of new specialized subjects, likewise contribute to making regional co-operation eminently desirable. This also applies to the preservice and in-service training of science teachers and certain categories of engineers. Lastly, there can be no doubt that the creation of a network of institutions for advanced scientific specialization, or "centres of excellence", would economize material and human resources, would contribute to the achievement of a wider endogenous scientific development, would check the brain drain, and would enable the States concerned to exploit more effectively, by their own means, their natural resources.

Unesco has already assisted the countries of your region in improving the teaching of mathematics, physics, chemistry, biology, the engineering sciences and the earth sciences. With the financial aid of the Organization of American States, it has compiled directories of scientific institutions and scientists in the region. It is hardly necessary for me to say that, within the limits of the resources at its disposal, it will spare no effort to continue this task.

As far as higher education, as a whole, is concerned, regional co-operation requires that students, teachers and research workers shall be able to move without hindrance from one country to another. For this reason it is advisable to harmonize curricula and conditions of admission to educational establishments; to adopt a common terminology and similar criteria for evaluation, based rather on the level achieved than on the content of curricula; and, lastly, to establish the equivalence of studies, diplomas, degrees and certificates, for the purposes both of the pursuit of studies or research and of the exercise of a profession.

Under the terms of resolution 1.262 adopted by the General Conference at its fifteenth session (1968), Unesco is seeking to encourage the conclusion of regional and multilateral agreements on this subject, and has held several meetings of experts to study the problem. The meeting held in Kingston last June drew up a preliminary draft of a regional convention on the international recognition of studies, diplomas and degrees in higher education in Latin America and the Caribbean. May I draw your attention particularly to this important document (UNESCO/MINESLA/REF/4), on which I hope your Conference will give its opinion.

There seem to be equally good arguments in favour of regional co-operation in connexion with scientific research in the universities. In this respect, the third meeting of the Standing Conference of Directors of National Councils for Science Policy and Research of the Latin American Member States, held at Viña del Mar and Santiago, Chile, in July 1971, put forward conclusions to which I should like to draw your attention. In Latin America, as in other developing regions, the universities, and not industry, are responsible for almost all the research effort needed for developing the national resources. The part they thus have to play is so important that, on the one hand, the universities must be in a position to take it on in the best possible conditions and, on the other, they must be invited to assist in the formulation of national science policies in the context of development planning. Here again, regional co-operation is clearly essential, for it alone can ensure that the choices made with regard to the fields for basic research and the priorities for applied research are reflected in balanced programmes on a region-wide scale. It alone can guarantee that the researches to be undertaken will command the critical mass of human and financial resources that will make them truly international.

In point of fact, the importance of concerted action on a regional scale is so clear that the General Conference, in resolution 5.6 adopted at its sixteenth session (1970), expressly invited me to lay before you proposals regarding regional integration in Latin America in the fields of Unesco's competence. Document UNESCO/MINESLA/4, which is submitted to you under this title, begins with a brief account of the problem and a summary of the action taken to give effect to that resolution, followed by the replies of Member States and regional organizations to my consultation on this subject, together with the report of the Commission responsible for the evaluation of Unesco's regional centres and those in respect of aid from the Organization in Latin America and the Caribbean.

That Commission, led by Dr. Carlos Tünnermann, Rector of the National Autonomous University at Nicaragua, studied the work of Unesco's own four regional offices or centres and the eleven regional institutions set up with its assistance. I should like to take this opportunity of expressing my hearty thanks to Dr. Tünnermann and the other members of the Commission, Dr. Augusto Franco (Colombia) and Dr. Santos Mayo (Argentina) for the excellent work they have done.

Lastly, you will find in document UNESCO/MINESLA/4/Add. the proposals which the General Conference asked me to make on the basis of the evaluation report and the consultations which I have carried out. I must tell you that I felt this task to be a great honour, but one that was also fraught with risk. Earlier than other regions of the world, Latin America, inspired by the fact that it has a common culture and historical destiny, strove towards the ideal of unity to which the great deliberator, Simón Bolívar, devoted his life. The road is long and arduous, however, and it must be realized that the idea of regional integration, which most of you cherish, needs to be defined more clearly and that this cannot be done without making political decisions, which are the prerogative of your governments. Groups of countries that have close ties because of their geographical situation, or strong affinities have, of course, already begun taking steps towards integration, but the progress achieved has thus far been mainly in the economic field.

How can integration now be extended to education, science and culture? What should be its geographical scope? Should Unesco's work be conducted within a regional or a sub-regional framework? What short-term, medium-term or long-term aims might be set for its activities? Should work be limited to developing the present programme of regional co-operation or should it take on an entirely new character? These, gentlemen, are the main questions to which I very much hope you will be able to provide answers at this Conference. They are, in my opinion, of decisive importance for guiding Unesco's future activities in your region. To facilitate your discussions, I have ventured to suggest some of the possibilities

which it seems to me might be considered, but it goes without saying that I shall be guided by the conclusions you reach. I shall keep them faithfully before me in the draft short- and medium-term programmes that I shall be submitting to the General Conference at its seventeenth session, in October 1972.

Mr. President,
Ministers,
Delegates,

I should like in concluding, to give you this twofold assurance: I am resolved to take the fullest possible account of the resolutions you may put forward for your own purposes as well as for Unesco's and I am most anxious to place the Organization's resources at the service of your region. It is true that Unesco's financial means, even when increased by the extra-budgetary aid provided by other United Nations bodies, are very meagre when compared with the needs to be met. But Unesco's resources are not only financial; they are also intellectual and moral. And I am convinced that the Organization's assistance, in various forms, may be invaluable if it is used where it can have the greatest multiplying effect. In this respect, the new Country programming procedure seems very promising, for it makes it possible to concentrate outside aid on the essential priorities established by governments. For my own part, I feel sure that Unesco, turning to good account the experience it has acquired throughout the world, is in a position to make a useful contribution to the formulation by your governments of their national education and science policies, with particular reference to reforming educational systems so as to bring about the difficult but imperative unification of technological progress and culture, of economic growth and the promotion of man's truest good.

By committing itself, with you and at your request, to this close and trustful co-operation in preparing for decisions on the problems that are of greatest importance for the future of your peoples, Unesco will best be able to spread the influence of that living message of universal humanism which it is called upon, at all times, to bring to the world. Latin America, with the generosity that has characterized it throughout its history, is, I know, particularly responsive to that message. With this in mind, ladies and gentlemen, I offer you my sincerest and warmest wishes for the success of your work.

Address by H. E. Doctor Rafael Caldera
President of the Republic of Venezuela

On behalf of the people and Government of Venezuela, I have great pleasure in extending a warm welcome to the participants of this important meeting. Mindful of the legacy that we Venezuelans have inherited from the thought and action of Bolívar, Andrés Bello, Francisco de Miranda, Sucre, Simón Rodríguez, we pledge our solidarity with the great Latin American family and acknowledge with gratitude our debt to the United Nations Educational, Scientific and Cultural Organization, and particularly to its Director-General, for their understanding of Latin America's concern to discover, through Unesco's specific sphere of action - namely, education, science and culture - the best way of achieving integration and of strengthening a national spirit of co-operation.

I must also thank the representatives of other international organizations who are present with us for their co-operation and interest in earlier meetings as well as in this one, which emphasize the importance ascribed by our governments to the rôle of education, technology and scientific knowledge in the development of our countries.

We realize that there is an essential link between education and development: this link is man. Since progress can only be achieved by man in full mastery of the tools created by his own intelligence, and since development can only be evaluated in terms of the human being as its necessary end, we believe that if development is to fulfil and achieve its specific function, man must be equipped to the fullest possible extent, so that he may engage in fruitful work and that the results of his efforts may conduce to his all-round improvement. For this reason we ascribe great importance to the fact that those who are dealing with concrete, specific, problems and who are devoting all their energies to the cause of education, science and technology should meet to make a survey of the difficulties, an assessment of the progress made, and to lay down the lines on which we may combine our efforts and achieve positive results that will benefit all our national communities.

We consider it of particular significance that, at the present Conference, a special place has been given to secondary education, and we think that this circumstance is indicative of a certain degree of progress. Traditionally, and until very recently, primary education was known as popular education; this was identified with the needs of the people. The idea of the democratization of secondary education indicates that the concept of popular education has outstripped the bounds of the first stage and that a subsequent stage, represented by secondary education, has come to be identified with the needs and demands of the people. This is a consequence of technological progress and a requirement of development. The democratization of education involves the provision of education for all, and, at the same time, from the substantive point of view, we believe it must involve education for freedom.

We are convinced that at the present time the situation in our countries calls for a fundamental reform of their educational systems, but we are also fully aware of our duty to provide the widest possible educational opportunities for the people in general.

The National Constitution of Venezuela - and it is by no means unique, since similar provisions of greater or lesser scope exist in practically all our countries - prescribes the right of everyone to education; it imposes on the State the duty of setting up and maintaining schools, institutes or services that are adequately equipped, so that the only limitation is that deriving from vocation and aptitude. The same organic Charter, in Article 78, enshrines one of the most honourable traditions of our country: namely, the provision in official institutes of free education at all levels. This obligation represents ever-increasing commitments for the State, since the Constitution makes provision for only one exception that may be established by law, applying to persons with private means in respect of higher and special education, whereas no legal provision exists applying this exception to the principle of free education in the case of anyone, from the level of pre-school education up to university and post-graduate studies.

We have endeavoured and are still endeavouring to comply with this undertaking enshrined in our organic Charter. In our budget for the year 1972, of the total estimated expenditure that will possibly amount to 13,400 million Bolívares, 2,139.5 million Bolívares have been assigned to the budget for the Ministry of Education. In other words, 15.9% of our total budget is devoted to education, whereas, as a valid comparison, the budget for the Ministry of Defence amounts to 1,259.2 million Bolívares, or 9.4%. It should be mentioned in connexion with these figures that the percentage of 15.9% assigned to the Ministry of Education does not include State commitments for the construction of school buildings, which are included in the budget for the Ministry of Public Works, whereas, on the other hand, the 9.4% for the Ministry of Defence includes obligations contracted by the Government to pay the relevant amounts for the acquisition of supplies to re-equip the armed forces. This provides proof of the sincere desire to meet the growing demands of the population with regard to education. We must, however, frankly admit that all those whose responsibility it is to study the problems of public expenditure, the orientation and administration of the budget, view with inevitable concern the escalating cost of education, which will probably exceed in the foreseeable future the normal average growth of government revenue and hence of the overall budget of the Republic.

We realize that all countries have similar problems - although perhaps in differing degrees - and we are aware that, as primary education achieves, from the quantitative point of view, levels that if not completely satisfactory at least provide in the main a satisfactory volume of educational services, the pressure on, and ever greater demand for, secondary education will of necessity increase, with inevitable repercussions on the demand for lecture rooms and facilities for higher education.

How we are to meet this situation, in the years to come, is no doubt something which Ministers of Education ponder daily. It may be necessary to call on all the resources of the imagination; fresh ideas will have to be explored; perhaps the time will come when we shall have to think of education as an aspect of social security. Thus, as the element of risk is eliminated and it becomes a tenet of social security, education will no longer be an unpredictable matter, the result of happy chance or adverse fortune brought about by the workings of society, but will rather become a concomitant responsibility of particular social factors, such as raising a family or building up a people. In view of this, we believe it may one day be possible to find some way of effectively guaranteeing the right of education for all and on such a scale as to meet the daily increasing demands of countries that are awake to the pressing need for a higher standard of living, increased productivity and positive integration, all of which will call for an immense effort.

We believe, moreover, that in planning methods of education and development, Ministers of Education and ministers specifically concerned with the subject, must consider the special characteristics we have to confer on education in our developing countries.

In the developed countries, while not denying the substantial effort made by particularly capable sectors to bring about change and progress many, perhaps the majority, of students have the impression of becoming a wheel in a vast mechanism, oppressive in its perfection, that leaves little scope for individual aptitude and is likely to engender feelings of frustration and rebelliousness. We believe that an appropriate orientation of the educational process in the developing countries could make young people feel that they will not become an insensate wheel in a vast mechanism that has already taken shape, but rather a creative cell in a new progressive situation; an element participating in a basic social process of change, a factor capable of bringing about a different world and, within this different world, a community of countries each with its own particular trend. For this reason, the awareness of the facts of the situation, the very presence of the need, the dictates of destiny, are bringing about, in a form that is much more spontaneous and firmly based than might be thought, a regional sentiment, an idea that we must find similar formulae. We must seek for ways of combining our efforts and for possibilities of interchange, such as those suggested in the documents for this Conference; we must seek to ensure constantly up-dated information, to exchange and co-ordinate study plans, to achieve equivalence of learning acquired in different countries, to make the recognition of foreign degrees easier; and, above all, we must try to ensure that every one of our resources is used to the maximum effect, extending, as far as is possible, to cover the whole region.

These matters are indeed of great interest to us, and for this reason we ascribe great importance to meetings such as the one that is now being inaugurated; for it can provide guidelines, propose norms, bring desires into harmony, and commit us to a common effort that will enable us to take practical advantage of the time, achieving tangible results in the Second Development Decade. At the same time, we are increasingly convinced that the profound sentiment of independence cherished by our peoples, which must be developed through an ever-increasing integration, cannot reach its fulfilment as long as we depend on others for our basic knowledge and for the ability to apply technology to the solution of our problems. Independence and integration are largely dependent upon education, culture, science and technology, and only by combining them will we succeed in turning to the best account the talents, the resources and the particular characteristics of the Latin American continent.

For these reasons, gentlemen, we believe that by bringing together those responsible for research,

study, culture and science in the Latin American countries we are taking an effective step towards strengthening our independence and sovereignty and giving positive expression to the genuine nationalism that exists in our communities. This is a constructive nationalism, an integrated nationalism, a nationalism that must look to the Latin American man to supply the constructive energy required for the performance of an immense task.

In this profound belief, we gladly welcome the holding of this Conference, and we are grateful to Unesco for the interest it has shown in facilitating and guiding the common consideration of our problems. By helping us in this way, Unesco has helped a great family of peoples to make the force of its desires felt and its voice heard in the concert of mankind. I can assure you, Mr. Director-General, that, as a more important part is assigned to Latin America in the solution of the world's problems, so will the likelihood be greater of the blessed advent of peace, understanding and solidarity among all men.

Ladies and gentlemen, it is my great honour and pleasure to declare open this Conference of Ministers of Education and Those Responsible for the Promotion of Science and Technology in Relation to Development in Latin America and the Caribbean.

ANNEX III

CLOSING ADDRESSES

Address by Mr. René Maheu

Address by H. E. Dr. Enrique Pérez Olivares

Annex III

Address by Mr. René Maheu,
Director-General of the United Nations Educational,
Scientific and Cultural Organization

Mr. President,
Ladies and gentlemen,

At the close of this Conference, with its fruitful deliberations and important results, I shall confine myself, in view of the lateness of the hour, to reviewing a few features of it which I feel are especially worthy of attention.

The first is, obviously, the general declaration which you adopted unanimously yesterday. It is clear and well drafted, and is both retrospective and prospective. After summating the progress made and the present state of education in Latin America and the Caribbean, it defines objectives for future action by your governments and the Organization. These objectives themselves derive from the major principles whose importance I ventured to indicate from the start - the democratization and the regeneration of education. On these two points your declaration contains some most productive ideas and adopts a very definite position.

With regard to democratization, no doubt there were and still are, differences of opinion among you, and how could it be otherwise? Democracy, democratization, are complex processes, as long and indefinite as the development of man himself. The important thing is that your differences of opinion should have been freely expressed and argued out in common. Thereby, you have demonstrated democracy by example.

It gives me great satisfaction that, on this subject, you did not confine your discussions to the purely quantitative aspects and that you did not treat education as a closed system. The democratization of education being, in the final count, the integration of the community in its totality into the education process, it is important that this process should be open to the totality of the community's problems. These preoccupations came out clearly in your deliberations and figure again, extremely well expressed, in the text to which you have given your approval.

With regard to the regeneration of education, I rejoice, on behalf of Unesco, which is now bending its energies to spreading this idea throughout the world, that this Conference should have afforded you the occasion for grasping the necessity and urgency of a systematic effort in the various countries of the region. Here also you have contrived not to stop at the technical modalities. You have gone into the realities of the problems, notably by taking into consideration the sociological and political context outside of which education would be no more than an engine ticking over in neutral. Following the boost which this Conference seems to me to have given to your ideas it will - I think - be wise to start concentrating on how to provide yourselves with the instruments for achieving the regeneration. The fact is that regeneration requires an intellectual and institutional setup which is still lacking in most of the countries and will therefore have to be brought progressively into being. In other words, I feel that you will need to do for the regeneration of education what you did so well over the preceding decade for its planning which is to "means" what regeneration is to "ends".

In sum, I have no doubt but that the Declaration of Caraballeda - for it will doubtless take its place in history under that name - will be as notable a date in the development of education in Latin America and the Caribbean, as the Declaration of Lima which, in 1956 gave so fecund an impulsion to the development of primary education.

Next, among the important results of this Conference, Mr. President, must be ranked the recommendations which you approved this morning on the report of your commissions. Those commissions deserve all our gratitude for the excellent work which they have done in considering complex problems in all their technicality. They were problems - as you know - bearing on the one hand on education at the secondary level and on the other on higher education and research. They were certainly concerned with general education but also and especially, with scientific and technological instruction, including agricultural training.

I think that the inclusion of those elements contributed to giving a great deal of substance and

realism to the discussions. How could it be otherwise, when science and technology are the driving force behind development? I like to say - and may I repeat it here - that development is nothing other than science become culture through the medium of education. Development, as you know better than anyone, does not amount merely to the exploitation of natural resources, for that may as well be done by foreigners as by citizens. Development consists in opening up and exploiting natural resources thanks to a human potential which, forged by education, has laid hold on the heritage of science in the double sense of knowledge and of an inventive and critical cast of mind. Accordingly, if we want education at the secondary level, and even more at the higher level to serve development, it is of the greatest importance to give special attention to the problems posed by the extension and improvement of science teaching and scientific research. For - I repeat - it is only when science has become an integral part of the civilization and culture of a country, that that country, whatever the poverty or wealth of its resources, achieves development.

In this connexion, I think that the numerous and precise recommendations which you have adopted are of such a kind as to give at once a fresh impulsion to the action of your governments, and an appropriate orientation to the Organization's efforts. Yes indeed, this instruction must be improved with very special reference to the needs of development. The universities in particular cannot conceivably remain ivory towers at the very moment when the students are transforming these into battle fields. Lastly, it is important, especially with regard to scientific research, to devise a rationalization of activities at regional level, so as to avoid duplication and the frittering of resources already inadequate and this must be accompanied by increased mobility of teachers, students and researchers.

I come now to the third of the major results of your Conference, probably the most spectacular, although the first two may perhaps be the most substantial. I mean the resolution which you adopted almost unanimously on integration. That is a success of which we may justly be proud, and which is all the more remarkable as we were not sure of achieving it. It was in fact one of the most delicate questions ever referred to the Secretariat for study. It has obvious political and economic implications, of which the essential elements are to a great extent outside the competence of the Organization. The question was also delicate - why not admit it? - because of the divergences and even conflicts existing in this connexion between your governments, despite the close solidarity and the undeniable community of aspirations of your peoples. Finally, the matter was rendered more interesting but also more complex by the composition of your Conference. The fact is that this is the first time that the Member States of Unesco of the Caribbean region have introduced into your regional system a cultural element which I feel is likely to be an original and important contribution and to deserve special attention from all.

But the most remarkable feature of the Conference has been precisely that you have not pretended not to notice all these difficulties with a view to arriving at a verbal consensus, which is the last refuge of conferences where real agreement cannot be reached, but where a communiqué must nevertheless be given to the press. I congratulate you on having adopted the honest attitude of recognizing difficulties and divergences of opinion so as to arrive at recommendations which corresponded to the possibilities of the moment. I think that in doing this you have shown wisdom and that you are inspired at once by the prophetic spirit of Bolívar and by the realism which it is for those responsible for political action to evince.

I shall not go into the details of the important recommendation which you have adopted - I shall merely mention a few of its features. First is that your Conference considers that the unity of Latin America must come to pass not by a bloodless uniformity, but by the recognition of the material diversity of your cultures and situations. You have therefore recommended to your countries and to Unesco alike a pluralist and gradualist approach. Pluralist in the sense of favouring a diversity of institutions and methods matching the variety of the situations. Gradualist since the great task of integration is not to be accomplished between one day and the next. On these premises, to which I personally subscribe wholeheartedly you have defined for Unesco a policy framework which I consider will be valid for several years and which I shall make it a duty to keep in mind in the draft short-term and medium-term programme which I shall have the honour to submit next year to the General Conference.

Mr. President,
Ladies and gentlemen,

So notable a result could not have been obtained without an atmosphere of understanding, tolerance, moderation and in a word friendship - whose creation has not been the least of the successes of your Conference. Conferences such as yours are not mere bureaucratic or diplomatic mechanisms; they are also and above all human experiences so that each of them has its individual "personality". The Conference which is drawing to a close has been marked by an atmosphere of mutual understanding, which, without excluding or glossing over differences of opnion, found its final expression in brotherliness for which I would congratulate you. Without this, nothing would have been possible, whatever the worth of the working papers or the competence and technical expertise of the participants.

And now, Mr. President, with the report which you have just approved, with this set of resolutions, recommendations and statements and with the spirit which animated the discussions, Unesco finds itself

in some sort the recipient from your hands of the message of Latin America and the Caribbean. I can assure you that my colleagues and myself will make every effort to see that this message is widely broadcast and understood. It will be spread first and foremost to your Member States so that they can take the appropriate measures, with Unesco of course holding itself at their disposal to provide aid, notably as suggested in some of your recommendations in organizing periodical meetings of experts. It will also be published to the world, for it is eminently to be desired that, in the setting of Unesco, each region should participate in a pluri-dimensional dialogue with all the others. For the regional conferences must not be looked on as closed meetings of introverted groups, but on the contrary as meetings between men of goodwill which have their places within the category of the universal. Through our publications, in particular, we shall use our best endeavours to make the world understand what has been said, thought and done here. Finally, we shall report to the competent authorities of the Organization, in particular the General Conference, so that they may take the decisions necessary in the domains where you would like the Organization to intervene and take action.

From another angle, the conclusions of your Conference must obviously be circulated to the public, for the support, understanding and participation of the public are essential, not only for the very work of Unesco, with its mission to act upon the minds of men, but further and above all because it is impossible for the great enterprises of the democratization and regeneration of education to be brought to pass simply by governmental decisions and the work of a few technicians. They must be backed by the nations themselves. And in that connexion how could I fail to express my delight at the interest which the press of this country in particular and - I know - that of other countries in the region has shown in your Conference, since the support of all men is the greatest strength of all of us. Unesco, as I have said, will not shirk its obligations in the matter, but I ask you to help us in your respective countries by the means you have of doing it.

Mr. President,
Ladies and gentlemen,

During your Conference I have been able to measure the confidence which the Member States in this region have in the Organization. I have seen this confidence growing steadily over the years and I have been able to discern that it came both from your attachment to the Organization's objectives and from your respect for the effectiveness of its action. And it is, perhaps, precisely because of this renewed confidence in Unesco's objectives and means of action that you have been able to agree on a development of the system whereby Unesco manifests its presence in Latin America. In this connexion I want you to know that we are going to adopt measures which will certainly open up a new phase in the intensification of our co-operation.

In conclusion, I should like, Mr. President, on behalf of my colleagues and myself, to express my deepest gratitude for the encouragement which we draw from this most enriching encounter. As it happens, I am not thinking simply of the expressions of your regard, deeply though these have touched us, but also and perhaps chiefly of the great tasks which you have outlined for the future of our common ventures. This region of the world has been called "the continent of hope", but it may also be said that Unesco itself is the Organization of hope. We have hope in common because, we believe in man, we believe in his future and each time that we have the occasion, in your company, to renew our faith, we get new strength from it. It is with these horizons of tomorrow in mind that I thank you once again for your confidence. We will do all in our power to be worthy of it.

Closing address by H. E. Dr. Enrique Pérez Olivares,
Minister of Education of Venezuela and President of the Conference

Mr. Director-General of Unesco,
Heads of delegations,
Ladies and gentlemen,

It has truly been an unforgettable experience for me to have been able to contribute to and have a part in the results of this Conference. I must confess that, at the outset of our work, the challenge of presiding over the Conference seemed to me too great for my strength and ability; and now, at the conclusion of our labours, I am convinced that this was indeed the case. It was you, the delegates to the Conference, and you, the staff members of Unesco, with the magnificent Secretariat which has constantly assisted us, that have made it possible to accomplish this task.

The presence of the Director-General of Unesco throughout the Conference, and his active, guiding participation in all our work, has undoubtedly constituted the most valuable individual contribution to this meeting, for which I should like to offer him my sincerest thanks.

Two facts that I have come to realize have made a profound impression on me. The first of these is the existence of our fundamental unity. When the Conference began, I feared I might find that the desire for integration, so often expressed by many of our leaders, reflected no more than an almost poetic dream. Today it is clear to me that those men who so strongly stressed the need to speed up the process of integration were fully aware of what constituted the real foundations of our unity in plurality.

I believe that at this stage in our history a Latin American and Caribbean nation is in fact being formed. When history gives birth to a new reality, it doubtless passes through phases of anguish, tension and pain, as happens in any birth. In the end, however, the feeling of having contributed to the creation of a new being fills the instrument of that creation with peace, tranquility and hope. We are now experiencing the moment of anguish, pain and uncertainty because we are in the process of creating this new entity in the concert of nations.

The second fact which I think I have detected is that we have advanced considerably in our development process. This is what has enabled us to place education in the context of society as a whole, that is to say in the political context, without letting our discussions stray into the realm of politics. In a fully responsible way we have taken up the challenge with which Unesco confronted us in preparing for us an agenda so rich in content and so well thought out and in placing education in the overall context where it rightly belongs. And, although perhaps at the beginning we were not all sure whether we were going to reply in depth to the questions raised or whether we would be content with formal-type statements, that doubt was quickly dissipated and we immediately made every effort to get to the bottom of our problems, trying to reflect with clarity and precision that consensus which is apparent in our general statements and recommendations.

Placing problems in their proper context, knowing how to distinguish their specific elements, assuming responsibility for replying directly to the questions put to us, and seeking ways of giving practical effect to our decisions: these are the best proofs of development.

The struggle in which we are engaged for the purpose of achieving our liberation will undoubtedly be won with this kind of cultural and intellectual development. Thus it is that the problem of development is being posed radically in our time.

The realization of these two facts fills me with deep joy and great hope.

I believe that our peoples are reaching a new stage, the nature of which it is very difficult to define at present, but it is a new stage which it is our responsibility to try to clarify in this decade.

We have agreed to initiate a decade of innovation in education, and this will require that we consider, realistically and thoroughly, as we have done in the past few days, whether the instruments which have hitherto been used for the furtherance of the educational process are still suitable or whether, on the contrary they constitute a hindrance.

Up to the present a tremendous effort has been

made - as is shown by the figures we have studied - to build schools: special places, isolated from the rest of the community and possessing all the equipment with which we have been able to endow them. We have also intensified the training of teachers: staff professionally dedicated to the task of instruction, to whom we have entrusted the almost exclusive right to transmit knowledge. We have moreover developed a kind of relation in the classroom where pupils and teachers meet, the latter to transmit and the former to receive knowledge.

We have become convinced that, to further the educational process, it is necessary to see that all members of the population attend school - in other words, to bring them to these isolated places so that they may become integrated in the hierarchical relation of the classroom and fulfil their function by sitting in front of a teacher in an effort to achieve a few degrees of knowledge which we have carefully systematized and tried to confine in our official curricula.

We subject these people, whom we have succeeded in enrolling in a school, to a process of successive levels, to a series of devices whereby their assimilation of knowledge is tested, and we award them documents in which their ability is formally attested. They then go out into the working world armed with these certificates, as persons qualified to fit into that world with some particular skill.

These have been our instruments. I have the firm conviction, which I feel bound to mention, even in these final words, that they are now beginning to be the most serious obstacles in the matter of education; and I believe that, when we begin the process of innovation, it is this type of problem which should form our basic preoccupation.

Little by little we have been approaching this critical attitude, yet we retain as prototypes the instruments to which I have just referred. It is true that we have systems of out-of-school education, but this is because we cannot put the entire population into schools; it is true that we accept persons who are not professionally trained and allow them to teach, but this is because we do not have sufficient trained staff; it is true that we make use of the means of social communication without having to have recourse to the hierarchical relationship of the classroom, but this is because of our inability to bring about what we consider to be desirable. In short, we must recognize that, because of the inadequacy of our educational model, we have begun to build a new one which will most likely be developed in the coming decade.

I believe there is another very important question to be asked if we wish to embark on a really thorough innovation. That question is: what is education intended for? What is its function? For several years past we have been saying, for development, but ... what is development? Is it economic growth? Is it the achieving of certain indices comparable to those in countries which consider themselves developed? What does it mean to strive towards those indices? Does it mean to copy societies which are held up to us as prototypes? "There, that is a developed society", we say to ourselves, "the challenge we have to meet is to become like that society". I am absolutely certain that this is a radically wrong approach in our continent. The challenge we have to meet is not to become like others; it is to become what we ourselves ought to be.

We should ask ourselves whether those societies are really developed. That they are strong and rich is beyond question. But in those societies do we find the self-fulfilment of the individual? Is there a clear perception of a scale of values, and is this in fact adhered to? Is there a realization of the universal commitment of the individual to mankind, and is practical effect given to this? We often have the impression that the answer is no. Hence, to the extent that we strive to imitate those societies - since we consider them as models - we may perhaps become like them, but in so doing we shall have betrayed our essential cultural individuality.

Our peoples do not wish to be excessively rich, they do not wish to be powerful, they do not wish to dominate others. Their desire is to be free, to live in justice; they are sensitive to the call to international commitment and solidarity. How can we give effect to these desires, deep rooted in the soul of the masses? And how can we see to it that our education is adapted to these aspirations? I am sure that there is only one way to do this, namely: to educate in liberty and for liberty, so that our people may build their own model of society, so that they may express their aspirations in structures, in forms, in standards, and so that they may not find themselves obliged to follow a path which will inevitably lead them where they do not wish to go.

Mr. Director-General, fellow delegates, forgive me for having ventured to make the foregoing remarks. I ought perhaps to have made them during the Conference, but if I refrained from doing so, it was in an endeavour to fulfil my duties as President to the best of my ability.

This Conference has afforded us an opportunity of becoming acquainted with problems and persons. I am certain that we now feel ourselves to be brothers and friends, that we appreciate one another more; and this would not have been possible if all of us who have met here had not wished it to be so.

I thank you sincerely for having allowed me to make your acquaintance, and for having allowed me to try to serve you, which is all I claim to have done during these past few days.

ANNEX IV

LIST OF DOCUMENTS

Working documents

UNESCO/MINESLA/1	Provisional Agenda
UNESCO/MINESLA/1 Add.	Annotated Provisional Agenda
UNESCO/MINESLA/2	Provisional Rules of Procedure
UNESCO/MINESLA/3	Development of education and science policies in Latin America and the Caribbean
UNESCO/MINESLA/4	Regional integration in Latin America in the fields of Unesco's competence
UNESCO/MINESLA/4 Add.	Regional integration in Latin America in the fields of Unesco's competence - proposals by the Director-General
UNESCO/MINESLA/4 Annex I Add.	Regional integration in Latin America in the fields of Unesco's competence - Annex I Addendum

Reference documents

UNESCO/MINESAL/REF/1	Unesco's activity in the fields of education, science and technology in Latin America and the Caribbean - 1966-1971
UNESCO/MINESLA/REF/2	Development and trends in the expansion of education in Latin America and the Caribbean - statistical data
UNESCO/MINESLA/REF/3	Activities of the Organization of American States in the areas of education, science and technology - 1966-1971
UNESCO/MINESLA/REF/4	Preliminary draft of the regional convention on the international recognition of studies, diplomas and degrees in higher education in Latin America and the Caribbean
UNESCO/MINESLA/REF/5	Secondary education, social structure and development in Latin America

Information documents

UNESCO/MINESLA/INF/1	General information
UNESCO/MINESLA/INF/2	List of documents
UNESCO/MINESLA/INF/3	Provisional list of participants
UNESCO/MINESLA/INF/4	Suggestions for the organization of the work of the Conference.

ANEXO V/ANNEXE V/ANNEX V

LISTA DE DELEGACIONES, OBSERVADORES Y REPRESENTANTES/
LISTE DES DELEGUES, OBSERVATEURS ET REPRESENTANTS/
LIST OF DELEGATES, OBSERVERS AND REPRESENTATIVES

I. LISTA DE DELEGADOS/LISTE DES DELEGUES/LIST OF DELEGATES

ARGENTINA/ARGENTINE

Delegados/Délégués/Delegates

Excmo. Sr. Dr. Gustavo Malek M.,
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(Jefe de la Delegación)

Sr. Alberto Eduardo Ham,
Delegado del Ministerio de Relaciones Exteriores

Sr. Angel Hernaiz,
Director del Instituto Nacional para el
Mejoramiento de la Enseñanza

Sr. Jorge Laurent,
Jefe de Gabinete del Ministro de Cultura
y Educación

Sr. Enrique Martín Tiempo Zeitlin,
Jefe del Departamento Cultural de la
Embajada Argentina en Venezuela

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Excmo. Sr. Dr. Augusto Mendizábal Moya,
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M. le professeur Heitor Gurgulino de Souza,
Rector de la Universidad Federal de São Carlos

M. le professeur Celso Barroso Leite,
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Anexo/Annexe/Annex V

GRUPO BRITANICO DEL CARIBE ORIENTAL/
GROUPE DES CARAIBES ORIENTALES
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Anexo/Annexe/Annex V

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TRINIDAD AND TOBAGO

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Diputado de la República

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Director General del Ministerio
de Educación

Anexo/Annexe/Annex V

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Rector de la Universidad Católica "Andrés Bello"

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Doctora Tatiana de Maekelt,
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Doctor Francisco Manuel Mármol,
Consejero o Consultor Jurídico del Ministerio de Relaciones Exteriores

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Departamento de Recursos Humanos, EDUPLAN

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Prof. Pedro Felipe Ledezma,
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Sr. Oswaldo Trejo,
Director Asistente en la Dirección Política Internacional del Ministerio de Relaciones Exteriores

Doctora Luisa Elena Vera de Ugueto,
Consejero en la Dirección de Política Internacional del Ministerio de Relaciones Exteriores

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Secretario de Asuntos Internacionales del Ministerio de Educación

II. LISTA DE OBSERVADORES/LISTE DES OBSERVATEURS/LIST OF OBSERVERS

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Subsecretario del Ministerio de Educación y Ciencia,
Miembro del Consejo Ejecutivo de la Unesco

Sr. Joaquín Ortega Salinas,
Primer Secretario de la Embajada de España en Venezuela

ESTADOS UNIDOS DE AMERICA/ETATS-UNIS D'AMERIQUE/UNITED STATES OF AMERICA

Observadores/Observateurs/Observers

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State Department

Mr. Norbert Kockler,
Member of U.S. Permanent Delegation to OAS

Mr. Rathburn Shelton,
Alumni Director, Westmount College,
Santa Barbara, California

Mr. Eldon Stewart,
Chief, Education Division USAID
U.S. Embassy, Caracas

REINO UNIDO/ROYAUME-UNI/UNITED KINGDOM

Observadores/Observateurs/Observers

Mr. S. Alexander,
British Council Representative in Venezuela

Mr. Kevin McGuiness,
Assistant Representative of the
British Council in Venezuela

SANTA SEDE/SAINT-SIEGE/HOLY SEE

Observadores/Observateurs/Observers

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Nonce apostolique au Venezuela
(Chef de la délégation)

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Recteur de l'Université catholique du Pérou

P. Luis Torres, O.P.,
Recteur de l'Université 'Santo Tomás' de Bogotá

P. Alfonso Quintana, S.J.,
Doyen de la Faculté d'éducation de la
'Pontffica Universidad Javeriana'

Professeur José Luis Aguilar,
Vice-recteur de l'Université catholique
'Andrés Bello' de Caracas

Frère Angel Castañeda, F.M.S.,
de la Sacrée Congrégation pour l'éducation catholique

P. Cecilio de Lora,
Secrétaire du Département de l'éducation du
Conseil épiscopal latino-américain (CELAM)

b) ORGANIZACIONES DEL SISTEMA DE LAS NACIONES UNIDAS/ORGANISATIONS DU SYSTEME DES NATIONS UNIES/ ORGANIZATIONS OF THE UNITED NATIONS SYSTEM

NACIONES UNIDAS/NATIONS UNIES/ UNITED NATIONS

Programa de las Naciones Unidas para el Desarrollo (PNUD)/Programme des Nations Unies pour le développement (PNUD)/United Nations Development Programme (UNDP)

Mr. Gabriel Valdes,
Assistant Administrator and Director
Regional Bureau for Latin America

Comisión Económica de las Naciones Unidas para América Latina (CEPAL)/Commission économique des Nations Unies pour l'Amérique latine (CEPAL)/ Economic Commission of the United Nations for Latin America (ECLA)

Mr. German Rama Facal,
Social Affairs Officer,
Division of Social Affairs, ECLA

Instituto Latinoamericano de Planificación Económica y Social (ILPES)/Institut latino-américain de la planification économique (ILPES)/Latin American Institute for Economic Planning (ILPES)

Sr. Francisco Giner de los Ríos,
Director a cargo de la Secretaría
del Instituto

Fondo de las Naciones Unidas para la Infancia (Unicef)/Fonds des Nations Unies pour l'enfance (FISE)/United Nations Children's Fund (Unicef)

Sr. Carlos Martínez Sotomayor,
Representante de Unicef en Colombia, Ecuador, Venezuela y el Caribe

Organización Internacional del Trabajo (OIT)/ Organisation internationale du travail (OIT)/ International Labour Organisation (ILO)

Mr. Robert Vallet,
ILO Regional Adviser on Vocational Training

Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO)/Organisation des Nations Unies pour l alimentation et l'agriculture (FAO)/Food and Agriculture Organization of the United Nations (FAO)

Sr. P. Moral López,
Representante Regional Adjunto para América Latina (Santiago de Chile)

Dr. Gerd Lehrendt,
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Representante de la FAO en Venezuela

Organización Mundial de la Salud (OMS)/Organisation mondiale de la santé (OMS)/World Health Organization (WHO)

Dr. Luis Ernesto Giraldo,
Home Adviser in Human Resources,
WHO Regional Office for the Americas,
Pan American Sanitary Bureau

Organización Meteorológica Mundial (OMM)/ Organisation météorologique mondiale (OMM)/ World Meteorological Organization (WMO)

Sr. Crel. Orlando Parra,
Permanent Representative of WMO
Director of the Meteorological Service of Venezuela

Dr. Antonio W. Goldbrunner
Deputy Representative

Banco Internacional de Reconstrucción y Fomento (BIRF)/Banque internationale pour la reconstruction et le développement (BIRD)/International Bank for Reconstruction and Development (IBRD)

Mr. Duncan S. Ballantine,
Director, Education Projects Department

Mr. John I. Stewart,

Mr. Kin Maung Thint,

Mr. Sven Burmester
All from the same Department

Centro Latinoamericano de Demografía (CELADE)/ Centre latino-américain de démographie/ (CELADE)/Latin American Demographic Centre (CELADE)

Sr. Jorge Arévalo
Demógrafo

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Chief, Education, Science and Technology Section

Mr. Hugo Romero,
Representative in Caracas

Centro Internacional de Cálculo (CIC)/Centre international de calcul (CIC)/International Computation Centre (ICC)

Dr E. Melrose A.,
Directeur du Centre de recherches statistiques et du calcul électronique

Centro Latinoamericano de Física (CLAF)/ Centre latino-américain de physique (CLAF)/ Latin American Centre of Physics (CLAF)

Prof. Roberto Bastos da Costa,
Director

Instituto Centroamericano de Investigación y Tecnología Industrial/Institut de recherches et de technologie industrielle pour l'Amérique centrale/ Central American Research Institute for Industry

Dr. Manuel Noriega Morales,
Director

Instituto Latinoamericano de la Comunicación Educativa/Institut latino-américain des communications éducatives/Latin American Institute for Educational Communication

Sr. Alvaro Gálvez y Fuentes,
Director

Organización de Estados Centroamericanos (ODECA)/Organisation des Etats d'Amérique centrale (ODECA)/Organization of Central American States (OCAS)

Observador/Observateur/Observer

Sr. Rosendo Chavarría,
Director de Asuntos Culturales y Educativos

Organización de los Estados Americanos (OEA)/ Organisation des Etats américains (OEA)/ Organization of American States (OAS)

Sr. Rodolfo Martínez,
Secretario Ejecutivo
Consejo Inteamericano para la Educación, la Ciencia y la Cultura

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Director de Educación

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Subdirector de Ciencia y Tecnología

Sr. Eduardo Rivas Casado,
Subdirector auxiliar del Departamento de Asuntos Educativos

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Miembro de la Comisión Asesora de la OEI y antiguo miembro del Consejo Ejecutivo de la Unesco

Sr. Alberto Castaño Abadía,
Representante adjunto de la OEI en Colombia

Sr. Félix Adam,
Miembro de la Comisión Asesora de la OEI

Secretaría de la Commonwealth/Secrétariat du Commonwealth/Commonwealth Secretariat

Dr. James A. Maraj,
Director of the Education Division

d) ORGANIZACIONES INTERNACIONALES NO GUBERNAMENTALES QUE MANTIENEN RELACIONES DE CONSULTA CON LA UNESCO (CATEGORIAS A Y B)/ORGANISATIONS INTERNATIONALES NON GOUVERNEMENTALES EN RELATION DE CONSULTATION AVEC L'UNESCO (CATEGORIES A ET B)/ INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS IN CONSULTATIVE RELATIONSHIP (CATEGORIES A AND B) WITH UNESCO

Alianza Internacional de Mujeres/Alliance internationale des femmes/International Alliance of Women

Mrs. Molly Toby,
Regional Director

Asociación Internacional de Orientación Escolar y Profesional/Association internationale d'orientation scolaire et professionnelle/International Association for Educational and Vocational Guidance

Dr. Francisco del Olmo,

Asociación Internacional de Universidades/ Association internationale des universités/ International Association of Universities

Mr. E.M.R. Keyes,
Secretary-General

Confederación Internacional de Organizaciones Sindicales Libres/Confédération internationale des syndicats libres/International Confederation of Free Trade Unions

Sr. Manuel Peñalver,
Vicepresidente de la Organización Regional Interamericana de Trabajadores (ORIT)

Sr. Basilio Gonzáles Hermosillo,
Secretario General Adjunto de ORIT

Confederación Mundial de Trabajo/Confédération mondiale du travail/World Confederation of Labour

Sr. Oscar Martínez Gutiérrez,
Subdirector del Instituto Latinoamericano de Estudios Sociales
Central Latinoamericana de Trabajadores (CLAT)

Consejo Internacional de Mujeres/Conseil international des femmes/International Council of Women

Dra. Isabel de la Pena de Calderón,
Presidente, Consejo Nacional de Mujeres del Perú

Federación Internacional Sindical de la Enseñanza/ Fédération internationale syndicale de l'enseignement/World Confederation of Organization of the Teaching Profession

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Oficina Internacional de Educación Católica/ Office international de l'enseignement catholique/ Catholic International Education Office

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Sr. Cecilio de Lora,
Secrétaire du Département d'éducation catholique de la Conférence épiscopale latino-américaine

Unión Internacional de Protección de la Infancia/Union internationale de protection de l'enfance/International Union for Child Welfare

Sr. Prof. Enrique Ravelo,
Consejo Venezolano del Niño

Unión de Universidades de América Latina/Union des universités d'Amérique latine/Union of Latin American Universities

Sr. Carlos Tunnermann Bernheim,
Vicepresidente

Sr. Efrén del Pozo,
Secretario General

Federación Mundial de las Asociaciones Cristianas de Estudiantes/Fédération universelle des associations chrétiennes d'étudiants/World's Students Christian Federation

r. Juan Chipamo Zambrano,

e) FUNDACIONES/FONDATIONS/FOUNDATIONS

Fundación Ford/Fondation Ford/Ford Foundation

Mr. James Himes,
Programme Officer

III. SECRETARIA DE LA CONFERENCIA/SECRETARIAT DE LA CONFERENCE/SECRETARIAT OF THE CONFERENCE

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Subdirector General de Educación/Sous-Directeur général pour l'éducation/Assistant Director-General for Education

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Secretaria/Secrétaire/Secretary

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Srta. Clara James

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